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A. D. MELVIN, CHIEF OF BUREAU.

DAIRY HERD RECORDS.

(FROM 1899 TO 1908, INCLUSIVE.)

A DIGEST PREPARED BY THE DAIRY DIVISION
FROM DATA COLLECTED BY W. D. HOARD.



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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
Washington, D. C., October 8, 1912.

SIR: I have the honor to transmit for publication the accompanying manuscript entitled "Dairy Herd Records," which is a compilation made in the Dairy Division of this bureau from the original records of investigations conducted by Mr. W. D. Hoard. The work of collecting these data was the private enterprise of Mr. Hoard, and the objects sought to be attained are explained in his introductory remarks, which precede this bulletin. The present compilation is the work of Messrs. William Hart Dexter, Helmer Rabild, and William C. Lee, of the Dairy Division, under the direction of the chief of the division, Mr. B. H. Rawl.

The investigations extended over a period of 10 years, from 1899 to 1908, inclusive. Although the nature of the work precluded absolute accuracy, the results are of undoubted value to dairymen because of the wide scope of the inquiry, which embraced altogether 2,163 herds, containing 28,447 cows, and located in 13 of the leading dairy States of the country.

It has been the aim of the compilers to present a digest of the most valuable features contained in the original data and to consolidate and arrange them so that they may be readily studied and compared.

Respectfully,

A. D. MELVIN,
Chief of Bureau.

Hon. JAMES WILSON,
Secretary of Agriculture.



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A FOREWORD.

Mr. B. H. Rawl, chief of the Dairy Division, under whose immediate supervision the important facts of this combined "cow census" are collected and presented in the form of a Government bulletin, has asked me to say a few words concerning this enterprise.

This census work was inaugurated for the reason that there was nowhere to be found a basis of fair and comprehensive calculation as to the economic relation of the dairy farmers of the United States to their business. The farmers kept no records. There were no bureaus of statistics that thought it worth while to look into these conditions. Neither the Federal Government nor the States established agencies of inquiry and analysis. Everywhere, from the farmer to the State and General Government, it was guesswork and only guesswork as to the actual relation of the cow to the farmer.

Serious discontent was felt in the dairy ranks everywhere. Something was wrong. I very strongly suspected that a broad, comprehensive, and thorough investigation would show that the lack of profit in ordinary dairy farming was due to the fact that farmers as a rule did not comprehend what dairy farming really meant—that they did not comprehend rightly the forces that must be put in motion to bring financial success.

This "cow census" work was started as a private enterprise, to get at the real facts. Experts, who thoroughly understood dairying, dairy cattle, and right dairy conditions, were employed to do the work. They would visit the farmer and get hold of all the facts at the farm end first. Then they would visit the creamery, where an accurate record was kept of the milk yield of the herd and of the returns in cash. One squared by the other told the story. Many conclusions have been worked out of this great mass of data.

The one great and paramount conclusion, overtopping all others, is that loss of profit in dairying is occasioned in nine cases out of ten by a lack of sound dairy intelligence on the part of the farmer who is behind the cow.

W. D. HOARD.

FORT ATKINSON, WIS.

DAIRY HERD RECORDS.

REVIEW OF EARLY CONDITIONS.

The introduction of the factory system of manufacturing dairy products, the invention of the cream separator, and the adoption of the Babcock test mark a revolution in the practice of dairying in the United States. In pioneer days the few cattle owned by widely scattered settlers pastured on uninclosed land or browsed in the woods near the clearings; and when in winter it became necessary to stable them little except straw and hay, the latter too often of inferior quality, was fed. In those days the production of milk, to say nothing of butter and cheese, during winter was unthought of on the average farm. Naturally enough, when the cattle ranged over rough or uninclosed lands and in winter found scanty subsistence from the straw stack, the cost of producing milk was measured only by the labor of milking, which usually fell to the lot of the women, and the expense of building the rude barn which sheltered the cows in winter.

In the year 1851 the first of the three great levers destined to lift the dairy industry to a higher plane was put in operation when the factory system of making cheese was adopted. A few years later the principle of cooperative effort so successful in the cheese industry was applied to the manufacture of butter. These early factories were mere shells of buildings, totally unfit for use in winter, even had there been milk available for cheese or butter making.

With the close of the neighborhood cheese factory or creamery in the fall another care was laid upon the busy housewife, for this event marked the beginning of the season to make and pack the winter's supply of butter, which had to be done before the cows went on their annual all-winter vacation. Half a century ago the majority of farmers had no faith in the special-purpose cow for either milk or beef. But the increasing demand for milk incidental to the growth of our urban population was a powerful incentive to its all-the-year-round production, so that here and there was to be found a farmer who had broken away from his early traditions and actually had cows in milk all winter.

By the year 1887, which marks the date of the first "cow census," there were in the United States in round numbers 4,000 cheese factories and creameries in operation, whose patrons were paid for

their milk and cream at stated periods, usually monthly. As they compared their receipts month by month and season by season, it became known that some of them were getting uniformly higher returns per cow than their neighbors. Wherever a patron set out honestly to discover why his neighbor's cows gave more satisfactory returns than his own, he found that it was owing to one or more of the following causes: Superior cows, better management, more liberal feeding, or better care on the part of the owner.

The questions whether it really paid to make any provision to tide the cows over any temporary scarcity of pasture in summer or to care for them in winter so as to have milk were about this time live issues at all farmers' meetings where dairying was discussed. On the one side were ranged the great mass of the farmers who claimed that milk produced in winter cost more than it was worth, that a cow would give as much milk in six months as she would if milked the year round, that forced and prolonged production would soon put an end to her usefulness, and that stable milk contained a nasty, cowy flavor from which a first-class article of butter or cheese could not be made; in which last view they were upheld by the majority of the butter and cheese makers.

On the other side were farmers, few in number but undeniably prospering, who had broken away from the old order of things, and who claimed that their cows yielded them not only higher gross returns but larger profits; who maintained that it paid them to stable their cows comfortably in winter, and that their herds gave them satisfactory returns for a more expensive winter ration containing grain. Here and there among them was to be found a farmer who had experimented with and was prepared to recommend a new feed called ensilage, by the use of which, he was convinced, he had reduced materially the cost of producing winter milk.

THE ORIGINAL COW CENSUS.

It was at this stage of the development of the dairy industry that in the year 1887, as has been stated, the first systematic effort in the United States to find out the actual cost of producing milk on a number of neighboring farms was undertaken by William D. Hoard. This work was carried out for Mr. Hoard in a very able way by Charles W. Jennings. The town of Ellisburg, N. Y., was chosen as a favorable place to carry out this investigation, which has since become known as "the original cow census." In this census there were included 5,507 cows, distributed on 367 farms, the milk being mostly sent to cheese factories. The purpose of the investigation was to discover the gross returns and approximate profits of the dairy on every farm visited and to ascertain the conditions under which the cows were kept in order to study the effects of breeding,

care, feeding, and management. Incidentally some study was made of the influence of the personality of the attendants and of intelligent interest taken in dairying by the owner, as shown by his taste for agricultural and dairy literature.

When the results of this census were compiled it was calculated that the feed consumed by these 5,507 cows in one year, if sold at local market prices, would have brought nearly \$25,000 more than the value of what the cows produced, including milk, cream, cheese, butter, skim milk, calves, and skins.

SCOPE AND METHOD OF THE LATER CANVASSES.

Following the original cow census at Ellisburg, N. Y., a series of similar investigations have been made in Iowa, Wisconsin, Indiana, Ohio, New York, Pennsylvania, Connecticut, Vermont, Minnesota, Michigan, New Hampshire, Massachusetts, and Illinois. Covering a period of 10 years from 1899 to 1908, inclusive, they represent the work of 26 district enumerations and include 2,163 herds, containing 28,447 cows. The consolidated records of these canvasses, numbered from 1 to 26, are shown later in the chronological order in which the canvasses were taken.

The method of conducting the canvasses necessarily varied to meet the conditions found. The general plan was to include in each canvass a sufficient number of representative herds to show fairly the equipment and practice prevailing in the territory covered. The canvasser would first visit the creamery, cheese factory, or receiving station. Here he usually had free access to the records and obtained figures showing the total receipts of milk or butterfat from each herd and the total amounts paid for such receipts during the year of the canvass. Having arranged his routes, the canvasser would then visit the farms selected and ascertain from the owner in each case the number of cows kept and particulars of the cost of feeding, together with such other information as was deemed necessary for the purpose of the investigation. These were taken down as stated by the farmer, usually from memory. The enumerators report that the farmers were perfectly willing to give them the information as soon as the object of the visit was explained. The enumerators frequently state, however, that the information collected in this way was not absolutely accurate.

LIMITATIONS OF THE WORK.

Certain limitations are inevitable in an investigation carried on by so many different canvassers in so many different localities and during so long a series of years. Exact definitions were not observed as to good and poor stables, although the general features of comfort, light, ventilation, and cleanliness are reported. Neither was any

exact definition observed as to good or poor dairy type. Good dairy type was judged by the canvassers sometimes with large reliance upon breeding, but usually by observation of form. That the enumerators had difficulty in finding out from the owners, who rarely had any record except memory, the exact rations fed to their cows is evidenced by extracts from their reports, such as the following:

Practically none of the farmers had any definite records of the cost of keeping a cow through the year, so that it was necessary here, as elsewhere, to compute the cost myself, after ascertaining what I could about the feeds used.

As none whom I met knew exactly how much feed was used in a year, it will be understood that the cost of keeping, as estimated, is only approximate and relative.

At the close of one canvass an enumerator wrote:

It is my belief that the cost of keep was fully \$1 per cow too low in some dairies, as it was the practice of nearly every low-grade dairyman to figure his grain ration very low as soon as he saw that his receipts were low. And I am as fully convinced that the receipts were too high, as given in many of these poor dairies, the claim always being made that a large amount of butter, cream, and milk was consumed in their families.

It will be noticed that the South and extreme West, where dairying is not so important relatively, have not been included in these investigations, the work being confined to the northeastern quarter of the country. The later work was confined almost exclusively to creamery patrons and hence is frequently referred to as "creamery patron investigations."

For the purpose of these investigations the cow was usually credited only with the value of her whole milk and butter or butter-fat, while the value of her skim milk, calf, manure, and final value as beef were not entered to her credit. It was assumed that these items balanced the charges for labor, housing, interest, insurance, and depreciation, also omitted, although these were items properly chargeable against the cow.

Other limitations can well be imagined when it is remembered that in order to determine any one point in dairy practice upon which doubt exists, care must be taken to have all details exactly alike except the one point under investigation. If, for instance, an experiment were undertaken to determine the value of silage as a feed for milch cows, and if the group of cows receiving silage were of dairy type, confined in comfortable stables, and bred to freshen in the fall, it would be difficult to compare the results with those obtained from a scrub herd fed on dry feed, in poor stables, and freshening in the spring, and say what proportion of the difference in yield was due to the superiority of silage as a feed.

VALUE OF THE RESULTS.

Values compensating for the limitations mentioned in the preceding chapter are found in the great number of herds and cows reported, the herds numbering 2,163 and the cows 28,447. The reports constitute a mass of most valuable material, such as never before has been available for study of the important questions involved.

Although the journal in which the original data were published has a wide circulation, and the publication of these investigations occasioned much comment when they appeared week after week, they are not now available except to the few who have preserved a file of the periodical covering the period of their issue. It is believed that the records of these investigations are of sufficient importance to entitle them to a permanent place in dairy literature, although the immense volume of the material prohibits publication of all the details. The aim of this digest is to present the most valuable features of this work so consolidated and compiled that they may be readily studied and compared.

For many years facts such as have been brought out in these canvasses have been demonstrated by experiments conducted by the various State experiment stations. Many of these experiments have been conducted with scientific exactness as to details over extended periods of time. Because of their confidence in the nature of this work, reading and thinking farmers have been convinced that they could apply the lessons taught and have had the courage to follow their convictions. While this is true of the more progressive type of dairy farmers, there was a large number who lacked this belief in the results obtained by the experiment stations; but when they found scores of prosperous dairymen all over the country making more money out of their cows, and ascribing their success to certain methods and equipment, and showing figures and other evidence to prove the truth of this claim, these unbelievers, who would have doubted the testimony of one or two eyewitnesses, could no longer doubt. They also obtained a basis for reckoning what they might expect to gain by adopting better methods themselves. Thus, the cow-census work has exercised a great and very helpful influence upon dairy practice.

DETAILS OF THE CANVASSES.

The results of each of the 26 canvasses are given in the following series of tables. The principal items recorded are:

- (1) The number of herds and the number of cows in each of the classes designated.
- (2) The yearly cost of feed per cow.
- (3) Yearly production of milk and butter or butterfat.

- (4) Returns for each dollar's worth of feed.
- (5) Yearly net profit or loss per cow.
- (6) Food cost of milk and of butter or butterfat.
- (7) Herds showing profit or loss.

The above particulars are classified and compared so as to give information, in so far as the limitations of the methods of investigating these problems and the available data permit, on the following points:

(1) The cost of milk and butter from herds of dairy breeding as compared with herds classified as dual-purpose cattle or as scrubs.

(2) The cost of producing milk and butter where silage formed a part of the ration in comparison with the cost where the cows were on dry feed.

(3) The expense of producing milk and butter when cows were comfortably housed in severe weather, compared with the expense of production when cows were poorly stabled.

(4) The results obtained by readers and nonreaders of agricultural literature.

In addition to the above, some of the canvasses also give information on the following points:

(5) The benefit of using soiling crops to supplement pasture.

(6) An investigation into the cost of producing milk where alfalfa hay was used as compared with carbonaceous roughage.

(7) The cost of producing milk entirely from home-grown feeds as compared with the cost where some feed was bought to supplement the feeds grown on the farm.

(8) The effect on the milk flow of warming the drinking water.

(9) The advantages and disadvantages of raising heifers to replenish the herd.

(10) The revenue from milk delivered at a cooperative creamery compared with that from selling to a condensing factory.

Additional particulars are given in notes following each enumeration.

Following the records of the canvasses are a series of tables in which these averages of the different features reported upon are consolidated and arranged in such a manner that they may be conveniently compared.

CANVASS NO. 1.

Conducted in Jefferson County, Wis., 1899. C. P. Goodrich, canvasser. 100 herds, 1,804 cows.

[Average price of milk, 88.6 cents per 100 pounds; average price of butter, 18.8 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,804	\$29.33	4,990	233	\$1.50	\$14.62	\$0.588	\$0.126	98	2
Cows:											
Dairy type.....	76	1,306	29.22	5,180	244	1.60	17.53	.564	.119	76	0
Dual purpose.....	24	498	29.67	4,390	196	1.22	6.67	.675	.151	22	2
Feed:											
Grain purchased.....	46	828	.....	.....	.....	1.57	.....	.....	.....	46	0
Feed home grown.....	54	976	.....	.....	.....	1.45	.....	.....	.....	52	2
Silage used.....	18	508	31.06	5,623	254	1.55	17.11	.552	.122	18	0
Stables:											
Good.....	55	990	29.37	5,192	247	1.61	19.92	.565	.115	55	0
Fair.....	33	594	.....	.....	.....	1.47	.....	.....	.....	33	0
Poor.....	12	220	28.83	3,950	177	1.14	4.04	.73	.163	10	2
Results:											
10 best herds.....	10	149	28.60	5,778	292	1.92	26.31	.494	.098	10	0
10 poorest herds.....	10	254	29.50	3,930	175	1.09	2.60	.75	.168	8	2

NOTES ON CANVASS NO. 1.

The only two herds in the canvass not making a profit have poor stables and scrub cows and buy no grain.

A comparison of the silage-fed herds with the average for the canvass is in favor of the silage-fed herds by an average net profit per cow of \$2.49, an increase in the flow of milk of 633 pounds per cow, an increase in the quantity of butter of 21 pounds per cow, a decrease in the food cost of milk of 3.6 cents per 100 pounds, and an increased return of 5 cents for each dollar's worth of feed.

This increased profit from feeding silage would amount, in the average herd, to \$70 per year. Of the herds fed silage, all but two are of dairy type, 12 have good stables, 6 have fair stables, none have poor stables.

A comparison as to the rations fed shows that those owners who buy their grain make 12 cents more on each dollar's worth of feed eaten than do the others who feed home-grown corn and oats. This illustrates the fact that, although it pays, generally speaking, to grow feed at home, it sometimes is cheaper to buy, especially if the home-grown feeds do not make up a properly balanced ration. For instance, it may be more economical to sell oats at a high price for horse feed and use the money to buy cottonseed meal, which will furnish protein for cows at a lower cost. Or if the home-grown feed consists wholly of carbohydrates, as corn and hay, it will pay well to buy nitrogenous feed rather than be without it.

The best 10 herds are all of dairy type, all but 1 have good stables, 3 are fed silage, and 7 are fed purchased protein.

Of the 10 poorest herds, only 1 is of dairy type, only 1 has a good stable, only 1 is fed silage, and 4 are fed purchased protein. This group produces only one-tenth as much net profit as the 10 best herds.

CANVASS NO. 2.

Conducted in Iowa, five counties, 1899. Frank Kinsley, canvasser. 100 herds, 882 cows.

[Average price of milk, 80.7 cents per 100 pounds; average price of butter, 19.4 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	882	\$26.05	3,600	159	\$1.16	\$4.16	\$0.702	\$0.169	62	38
Cows:											
Dairy type.....	17	160	26.18	5,030	248	1.78	20.43	.52	.105	17	0
Dual purpose.....	83	722	25.46	3,150	134	1.02	.54	.82	.19	45	38
Feed: Use of silage.....	3	70	29.00	5,767	302	1.98	28.32	.503	.096	3	0
Reading:											
Owners read dairy literature.....	25	221	26.34	4,097	182	1.28	7.38	.642	.145	20	5
Owners do not read.....	75	661	24.87	3,141	135	1.03	.75	.791	.185	42	33
Results:											
10 best herds.....	10	136	27.20	5,358	285	2.00	27.20	.507	.096	10	0
10 poorest herds.....	10	123	26.00	2,265	89	.65	-9.10	1.14	.293	0	10
6 best dairy-type herds.....	6	88	27.00	5,637	303	2.15	31.05	.479	.089	6	0
6 best dual-purpose herds.....	6	82	32.50	5,316	234	1.36	11.86	.613	.139	6	0
Best single dairy-type herd.....	1	8	24.00	5,966	334	2.64	39.46	.402	.072	1	0
Best single dual-purpose herd.....	1	20	32.00	6,000	300	1.78	24.96	.533	.107	1	0

NOTES ON CANVASS NO. 2.

All the herds reporting a net loss are dual purpose, grade Shorthorn, or native.

All the silage feeders are also readers; two have dairy-type herds, one dual purpose.

Of the best 10 herds, 9 are of dairy type and 1 dual purpose; 5 owners read dairy literature, 3 say they do not, and the other 2 do not report on this point.

Of the poorest 10 herds, none are of dairy type, and only 2 owners read dairy literature.

Comparing the best six herds of dairy type with the best six dual-purpose herds, the figures show that if the owners of the 82 dual-purpose cows had fed the same feed, costing \$2,665, all together to cows of dairy type, this feed would have fed 98 dairy cows, which would have returned a net profit of \$3,042.90, over three times the amount of profit actually produced by the 82 dual-purpose cows, which was \$972.52.

Or, the \$972.52 net profit received from the 82 dual-purpose cows might have been earned by 32 dairy cows at an expense for feed of \$864, less than one-third the feed bill of the 82 dual-purpose cows.

The dairyman who reads dairy literature secures nine times the net profit of the nonreader. By reference to the table it will be seen that those who read make 28 cents on the dollar net profit, while those who do not read make only 3 cents.

The ratio of profitable to unprofitable dairies is more than three times as great among the readers as among the nonreaders, which means that dairymen who read dairy literature stand more than three times as much chance of making a profit as those who do not read.¹

¹ The following explanation is offered of the manner of comparing ratios here and elsewhere in these pages: Among the herds belonging to men who read there are 20 profitable to 5 unprofitable. The ratio may be written in different ways, as 20 to 5, 20:5, or $\frac{20}{5}$, which equals 4 to 1.

On the other hand, among the herds belonging to men who do not read there are 42 profitable to 33 unprofitable. This ratio, like the other, may be written in different ways, as 42 to 33, 42:33, or $\frac{42}{33}$, which equals 1.27 to 1.

It will be seen that the former ratio is more than three times as great as the latter, indicating the proportion of readers who make a profit compared with the nonreaders who do so.

CANVASS NO. 3.

Conducted in Ohio, 1899-1900. Representing four creameries in five counties of eastern Ohio, George E. Scott, canvasser. 100 herds, 994 cows.

[Average price of milk, \$1.05 per 100 pounds; average price of butter, 19.8 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	994	\$26.58	4,048	214	\$1.60	\$15.94	\$0.656	\$0.124	97	3
Cows:											
Dairy type.....	39	418	27.05	4,548	249	1.88	23.80	.594	.108	39	0
Dual purpose.....	20	170	27.60	3,510	174	1.31	8.56	.786	.158	17	3
Feed:											
Silage fed.....	40	506	25.82	4,278	230	1.75	19.35	.603	.112	39	1
No silage.....	60	488	27.08	3,895	203	1.50	13.68	.695	.133	58	2
Stables:											
Good.....	50	535	26.92	4,447	237	1.78	21.00	.605	.114	50	0
Poor.....	15	117	26.47	3,274	168	1.29	7.68	.809	.157	13	2
Results:											
Best herds.....	15	163	25.00	4,680	259	2.14	28.50	.534	.097	15	0
Poorest herds.....	15	119	27.00	2,850	147	1.09	2.43	.968	.184	12	3

NOTES ON CANVASS NO. 3.

Only three herds of this canvass return less than the cost of feed. The average returns for \$1 spent on feed are greater than in any other canvass, amounting to \$1.61.

The average herd of this canvass is 10 cows. When of dairy type, this size herd returns \$238 net profit. When of dual-purpose type, it returns \$85.60, showing nearly three times the profit from dairy-type cows over dual purpose.

In this locality silage costs about \$2 per ton for growing and storing. The silage feeders have the advantage over those not using silage in a reduced cost of \$1.26 per cow, an increased net profit of \$5.67 per cow, an increased production of milk of 383 pounds per cow, and an increased production of butter of 27 pounds per cow, producing milk at a food cost lower by 9.2 cents per 100 pounds and butter at a food cost lower by 2.1 cents per pound, and showing a return for each dollar spent in feed of 25 cents more than those who do not feed silage and a net profit 50 per cent greater.

The herds showing a combination of dairy type with silage feeding number 22, with 289 cows, and return \$1.93 for each dollar spent in feed. On the other hand, the herds representing a combination of native blood without silage feeding number 17, with 129 cows, and for each dollar spent in feed they return \$1.31, showing three times as much net profit from the better combination of breeding and feeding.

The best 15 herds return in each case an average profit of \$2 or more for each dollar spent in feed. All of them are of dairy type; 12 of them are fed silage, 10 have good stables, 5 have fair stables.

The poorest 15 herds return in each case an average of \$1.25 or less for each dollar spent in feed. Only 1 of these herds is of dairy type; 6 are grades of dairy breeds, but of poor type; 8 are of native or mixed breeds; 3 are fed silage; none have good stables, 8 have fair stables, 7 have poor stables.

CANVASS NO. 4.

Conducted in Delaware and Otsego Counties, N. Y., 1900. W. H. Jenkins,
canvasser. 100 herds, 1,704 cows.

[Price of milk, 93 cents per 100 pounds; price of butter, 18 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow, yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass	100	1,704	\$31.99	3,623	188	\$1.05	\$1.60	\$0.883	\$0.17	53	47
Cows:											
Dairy type	40	712	32.27	.....	229	1.28	8.93	.....	.141	37	3
Mixed breeds	50	801	31.54	.....	158	0.89	-3.43	.....	.20	10	40
Feed:											
Silage used	26	566	31.77	.....	192	1.10	3.22	.....	.165	14	12
Soiling crops fed	21	337	30.90	.....	198	1.15	4.63	.....	.156	15	6
Stables:											
Good	33	561	33.27	4,248	229	1.23	7.65	.783	.146	28	5
Fair	50	850	.....	.....	.....	1.01	.....	.....	.24	26	26
Poor	17	293	30.94	2,841	144	.82	-5.57	1.089	.215	1	16
Reading:											
Dairy literature	13	221	31.92	3,898	208	1.23	7.34	.819	.153	11	2
Agricultural literature	20	340	.....	.....	.....	1.03	.....	.....	.....	10	10
Nothing	67	1,143	31.66	3,505	180	1.03	0.95	.903	.176	32	35
Results:											
Best herds	10	140	34.60	.....	294	1.52	17.99	.....	.117	10	0
Poorest herds	10	140	33.80	.....	132	.75	-8.32	.....	.256	0	10
Best single herd	1	17	37.00	.....	355	1.67	24.63	.....	.107	1	0

NOTES ON CANVASS NO. 4.

These 100 herds are scattered among the valleys of the Delaware, Susquehanna, and Chenango Rivers, generally at some distance from the railroad in representative localities, but not in the best. A good ration here costs \$35 to \$40, divided as follows: Two tons hay, \$20; $\frac{1}{2}$ ton grain, \$10; pasture, \$5 to \$10. This amount is reduced by soiling or feeding silage and by keeping the cows in warm stables.

The fact that a few men make a profit shows that it is possible when there is study and intelligent practice according to the successful methods pointed out in this canvass. Intelligence and character form the basis of success. Primitive methods are losing money. As a rule, those men are the most successful who read good dairy literature and attend farmers' institutes and other similar meetings.

Of the 40 dairy-type herds 11 are fed silage, 25 have good stables, 14 have fair stables, only 1 has a poor stable, 15 owners read, and 25 do not.

Of the 50 mixed herds 15 are fed silage, 7 have good stables, 27 have fair stables, 16 have poor stables, 12 of the owners read, and 38 do not.

A comparison of the dairy type and mixed herds shows a difference of \$12.36 in net profit per cow in favor of the dairy type, and the food cost of butter for cows of the dairy type is only about 70 per cent as much as it is in the mixed herds. The reports are uncertain as to the type of 10 herds in this canvass.

Of the 26 silage-fed herds 9 have good stables, 14 have fair stables, 3 have poor stables, 11 owners read, and 15 owners do not.

The average profit from silage-fed herds is just twice the average profit in the whole canvass.

Of the 21 herds fed soiling crops 10 are of dairy type, 7 of mixed blood, and 4 uncertain; 8 have good stables, 10 have fair stables, and 3 have poor stables; 4 owners read dairy papers, 6 read agricultural papers, and 11 read none. Only 1 owner feeds silage in addition to soiling, but he receives \$1.58 for each dollar spent in feed.

The average net profit of those who practice soiling is three times the average of the whole canvass.

Of the best 10 herds all return an average of \$1.37 or more for each dollar spent in feed, all are of dairy type, 8 have good stables, 2 have fair stables, 4 are fed silage, 3 are fed soiling crops, 3 owners read dairy papers, 3 read agricultural papers, 4 read none.

Of the poorest 10 herds all lose an average of 25 cents on each dollar spent for feed, 1 herd is of dairy type, 1 has a good stable, 4 have fair stables, 5 have poor stables, none of the owners read dairy papers, 3 read agricultural papers, and 7 read none. One herd is fed silage and 1 is fed soiling crops.

The 8 herds showing the best combination of features produce an average of 231 pounds of butter and a return of \$1.34 for each dollar's worth of feed, the lowest return from the cows of any herd in the group being \$1.14 for each dollar's worth of feed. All these herds are of dairy type and have good stables, 6 are fed silage, 2 are fed soiling crops, and all the owners read dairy literature.

The best single herd is of dairy type, is kept in a good stable, and is fed soiling crops and purchased protein. Grain is fed 10 months of the year. The owner is a good judge of cows, is proud of his herd, and likes his business.

CANVASS NO. 5.

Conducted in Susquehanna County, Pa., 1901. W. H. Jenkins, canvasser. 50 herds, 663 cows.

[Average price of milk, \$1.056 per hundred pounds.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass.....	50	663	\$33.04	3,879	\$1.26	\$8.63	\$0.852	39	11
Cows:									
Dairy type.....	15	235	33.08	5,007	1.63	20.85	.70	15	0
Not dairy type.....	21	265	32.00	3,296	1.05	1.70	.97	13	8
Feed:									
Silage.....	14	259	34.21	4,525	1.41	13.91	.756	12	2
No silage.....	36	404	33.14	3,696	1.18	6.04	.977	27	9
Stables:									
Good.....	13	173	34.62	5,041	1.56	19.39	.687	12	1
Fair.....	22	291	.....	.....	1.27	.....	.....	21	1
Poor.....	15	199	32.87	3,073	.98	— .66	1.07	6	9
Reading dairy literature:									
Readers.....	30	398	33.93	4,414	1.38	12.89	.769	27	3
Nonreaders.....	20	265	31.80	3,218	1.07	2.23	.988	12	8
Results:									
Most profitable herds.....	10	172	35.00	5,178	1.67	23.45	.675	10	0
Least profitable herds.....	10	149	33.21	2,614	.82	— 5.98	1.27	0	10
Combination of features:									
Best combination.....	12	195	35.00	5,244	1.62	21.83	.667	12	0
Worst combination.....	8	112	33.00	2,798	.87	— 4.20	1.215	1	7

NOTES ON CANVASS NO. 5.

All owners of dairy-type herds are readers, 12 have good stables, 3 have fair stables, 9 feed silage.

The type of 14 herds is not reported.

Of the owners of herds not of dairy type 5 feed silage, none have good stables, 11 have fair stables, and 10 poor stables; 8 read agricultural papers and 13 read nothing.

The average net profit of the dairy type herds is 12 times that of the scrubs.

Of the silage feeders all but 1 are readers, and that 1 receives but 57 cents for each dollar spent in feed. Nine of these herds are of dairy type and return an average of \$1.63 for each dollar spent in feed. Five herds are not of dairy type and return \$1.02 for each dollar spent in feed. Eight of the silage feeders have good stables, 4 have fair stables, and 2 have poor stables.

Of the herds fed no silage 6 are of dairy type and 16 are not of dairy type; of 14 the type is not reported. Seventeen owners read and 19 owners do not. Five have good stables, 18 have fair stables, 13 have poor stables. The silage feeders clear a net profit more than twice as great as that of the men who do not feed silage.

Of the 10 most profitable herds 8 are of dairy type, 2 are grades of dairy breeds, but of uncertain type. All the owners are readers, 6 feed silage, 8 have good stables, and 2 have fair stables.

All but 2 of the most profitable herds are in the group showing the best combination of features.

Of the owners of the 10 least profitable herds 2 are readers and 8 are not. None of the herds is of dairy type, 2 are fed silage, 1 has a good stable, 1 has a fair stable, and 8 have poor stables.

The best combination of features is where all have good stables, all the owners are readers, and all have dairy-bred herds. These number 12. Eight of these herds are fed silage. Comparing this group of 12 herds with the most profitable 10, we find the cost of feeding is the same. The food cost of milk is slightly less in the case of the best combination of features, but the net profit is greater in the 10 most profitable herds. The explanation of this apparent contradiction appears to be that in the case of the group showing greatest net profit the largest proportionate quantity of milk was produced in the winter when the price was high, while the food cost of milk is slightly less in the case of the herds producing relatively more of their milk during the summer time.

In the worst combination of features are included herds of scrub type, with poor stables, whose owners do not read. All but 1 of this group are in the group of the 10 herds making least profit.

The average net profit of dairymen who read is five times that of those who do not.

The average net profit of dairymen with good stables is twice that of those whose stables are only fair, while the ratio of profitable to unprofitable herds is 18 times as great among those having good stables as among those having poor stables.¹

The canvasser calls attention to the following observations:

(1) This canvass of creamery patrons is fairly representative of the dairy industry in the State at the time.

(2) Only about one-half of the owners read any agricultural papers or use means for dairy education. Of this number less than half read dairy papers or literature.

(3) There is notable waste, especially through the feeding of poor cows.

(4) The principles of breeding are understood by very few. Less than 10 per cent keep good, pure-bred sires.

(5) The feeding of unbalanced rations is notable.

(6) Too much food is given for fuel instead of for milk. Three-fourths of the herds are not stabled with sufficient warmth.

(7) Not more than 10 per cent have stables sufficiently ventilated or lighted.

(8) Manure is wasted. Not more than 10 or 20 per cent have tight gutters with absorbents so as to save liquids, or spread manure daily on soil.

(9) Cornstalks are generally fed uncut and dry, only about one-half of which are actually eaten. The number of silos is increasing.

(10) None grow soiling crops for protein (alfalfa, peas, etc.).

(11) Much dissatisfaction, debt, and discouragement prevail.

¹ For explanation in regard to comparison of ratios, see footnote to canvass 2, p. 14.

(12) In every locality there are a few progressive and prosperous dairymen. Note the range from returns of \$70 per cow, with \$1.75 for \$1 in feed, down to \$15 per cow, with \$0.50 returned for every \$1 in feed.

(13) To succeed, a dairyman must first see something in cows more than mere machines; then if he loves his business, his success is reasonably sure.

CANVASS NO. 6.

Conducted in Dunn County, Wis., 1901. C. P. Goodrich, canvasser. 52 herds, 647 cows.

[Average price of milk, 82.6 cents per 100 pounds; average price of butter, 17.8 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass	52	647	\$26.96	4,796	222	\$1.47	\$12.68	\$0.562	\$0.122	51	1
Cows:											
Dairy type	14	193	26.71	5,356	236	1.68	18.05	.491	.113	14	0
Not dairy type	30	344	27.06	4,382	197	1.34	9.27	.617	.137	29	1
Results:											
Most profitable herds	10	123	25.10	5,918	276	1.98	24.61	.424	.09	10	0
Least profitable herds	10	134	28.80	3,755	174	1.08	2.28	.767	.165	9	1

NOTES ON CANVASS NO. 6.

Eight herds of this canvass are of uncertain type.

Of the 52 herds, all but one make a profit, and that one returns 98 cents for each dollar spent on feed. The net profit per cow from the dairy type herds is double that from the scrubs. Of the 10 most profitable herds, 7 are of dairy type. Of the 10 least profitable herds, none are of dairy type.

CANVASS NO. 7.

Conducted in Onondaga County, N. Y., 1901-2. W. H. Jenkins, canvasser. 80 herds, 948 cows.

[Average price of milk, 89.3 cents per 100 pounds; average price of butter, 19.3 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass	80	948	\$30.07	3,981	184	\$1.19	\$5.79	\$0.755	\$0.163	54	26
Cows:											
Dairy type	20	235	28.00	5,044	245	1.67	18.76	.553	.114	20	0
Mixed herds	23	264	31.00	3,084	143	.87	- 3.87	1.005	.216	9	14
Feed:											
Alfalfa	40	594	28.83	4,214	201	1.35	10.05	.684	.143	31	9
Carbonaceous roughage	40	354	31.31	3,748	167	1.05	1.53	.835	.187	23	17
Stables:											
Good	11	132	30.73	5,071	244	1.63	19.36	.606	.126	11	0
Poor	33	396	30.53	3,488	162	1.10	3.05	.875	.188	16	17
Reading dairy literature:											
Owners read	26	308	32.04	4,645	216	1.39	12.50	.69	.149	20	6
Owners do not read	54	640	29.13	3,581	165	1.14	4.08	.813	.177	33	21
Results:											
Largest profits	10	109	26.50	5,544	256	1.97	25.75	.476	.103	10	0
Smallest profits	10	94	32.60	2,432	113	.63	-12.06	1.34	.288	0	10
Combination of features:											
Best combination	7	83	29.00	5,175	260	1.75	21.75	.56	.111	7	0
Worst combination	13	144	31.00	2,836	133	.82	- 5.58	1.09	.233	4	9

NOTES ON CANVASS NO. 7.

This canvass makes prominent a comparison as to the economy of feeding between home-grown alfalfa and purchased protein. There are 40 herds of each class. The alfalfa growers feed little or no grain. The grain feeders use timothy hay and corn stover or silage for their winter roughage. Both classes have practically the same pasture.

The alfalfa growers secure an average net profit per cow per year \$8.52 greater than that of the feeders of carbonaceous roughage. The ratio of profitable to unprofitable herds is $2\frac{1}{2}$ times as great among the alfalfa feeders as it is among the feeders of carbonaceous roughage.¹

Of the 10 herds showing largest profit, all but 2 are of dairy type. Five have good stables, 3 have fair stables, 2 have poor stables. Seven owners read; 3 do not.

Of the 10 herds showing least profit, all are of mixed breeding except 2, which are said to be grades, but are not of dairy type. All have poor stables except one, which is fair. Only one owner is a reader.

Most of the herds in this canvass are renewed by raising the heifers from the best cows. Fifteen herds in which the practice prevails of buying cows for building up the herd return an average for each dollar spent in feed of \$1.08; the average return for the whole canvass being \$1.19.

Herds in good stables return a net profit six times as great as those in poor stables.

The readers receive nearly three times the average net profit of the nonreaders, while the ratio of profitable to unprofitable herds among the readers (20:6) is more than twice as great as the corresponding ratio among the nonreaders (33:21).¹

The group showing the best combination of features (herds of dairy type, stables good, owners readers) includes the herd showing largest yield of butter for the canvass, 355 pounds per cow, and the herd making the largest return for one dollar spent in feed, namely \$2.19.

The 13 herds designated as having the worst combination of features are those consisting of scrub cattle, kept in poor stables, by owners who do not read. Under these conditions it costs twice as much to make a given quantity of milk or butter as under the conditions of the best combination of features.

Mr. W. H. Jenkins, who took this canvass, draws the following conclusions as to the principles of success in profitable dairy farming:

- (1) Breed for the largest yield of butter fat.
- (2) Feed a balanced and succulent ration, grown mostly on the farm.
- (3) Use comfortable and sanitary stables.
- (4) Spread all the manure on the soil without loss.

¹ For explanation in regard to comparison of ratios, see footnote to canvass 2, p. 14.

CANVASS NO. 8.

Conducted in vicinity of Bainbridge, New York, 1901-2, among creamery patrons.
H. H. Lyon, canvasser. 100 herds, 1,553 cows.

[Average price of milk, 99.5 cents per 100 pounds.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,553	\$38.10	3,908	\$1.02	\$0.89	\$0.975	58	42
Cows:									
Dairy type.....	27	428	38.98	4,629	1.20	7.79	.842	25	2
Mixed type.....	12	185	36.43	3,116	.85	5.27	1.105	2	10
Feed: Silage fed.....	25	548	38.68	4,139	1.06	2.32	.935	15	10
Stables:									
Good.....	43	666	38.98	4,256	1.10	4.05	.914	28	15
Poor.....	25	387	35.76	3,255	.87	4.50	1.099	8	17
Reading:									
Dairy literature.....	7	108	41.00	5,366	1.39	15.99	.764	7	0
Agricultural literature.....	34	527			1.04			22	12
Nothing.....	44	682	37.61	3,546	.93	2.44	1.061	20	24
Results:									
Most profitable herds.....	10	146	38.30	5,389	1.43	16.66	.71	10	0
Least profitable herds.....	10	146	36.60	2,303	.60	14.53	1.58	0	10
Combination of features:									
Best combination.....	5	97	38.00	5,350	1.40	15.20	.71	5	0
Poorest combination.....	4	42	36.50	3,099	.84	5.84	1.18	0	4

NOTES ON CANVASS NO. 8.

This canvass represents a territory supplying whole milk to creameries by weight.

The herd showing the largest percentage of profit returns \$1.67 for each dollar spent in feed, is of dairy type, and has a good stable; the owner reads dairy literature and feeds silage.

It appears that large factors in success are the character of the cow, the owner's skill in selection, and the feed and care given.

The apparent needs of this territory are better and cheaper rations and better cows. There is no pure-bred herd in this canvass. Only two herds have pure-bred sires, and these were only recently placed in service.

Of the dairy type herds, 9 are fed silage, 14 have good stables, 12 have fair stables, and one has a poor stable; 17 owners read, and 7 do not.

Of the mixed herds, 2 are fed silage, 4 have good stables, 1 a fair stable, and 7 poor stables; 3 owners read, and 8 do not.

The dairy type herds return 35 cents more for each dollar's worth of feed than the mixed herds, the net profit being \$13.06 greater. The type of 61 of the herds in this canvass is not reported.

Of the silage-fed herds, 9 are of dairy type, and 2 mixed, 14 being uncertain. Thirteen have good stables, 8 have fair stables, 4 have poor stables; 15 owners read, and 8 do not. The net profit of the silage-fed herds is $2\frac{1}{2}$ times the average for the whole canvass.

The ratio of profitable to unprofitable herds is nearly three times (2.9) as great among the readers as among those who do not read.¹

The ratio of profitable to unprofitable herds is four times as great with good stables as with poor stables.¹

Of the 10 most profitable herds, 7 are of dairy type, 5 are fed silage, 7 have good stables, 2 have fair stables, 1 has a poor stable, and 9 owners read.

¹ For explanation in regard to comparison of ratios see footnote to canvass 2, p. 14.

Of the 10 least profitable herds, 1 is composed of dairy grades; the others are mixed. Only 2 owners are readers, and they of agricultural, not dairy papers. Only 2 herds are fed silage; only 1 has a good stable, 3 have fair stables, and 6 have poor stables.

The least profitable herds average 14.6 cows to the herd. At the average loss of \$14.53 per cow, the loss on each such herd amounts to \$212.14 per year.

The best combination of features includes dairy type, silage feeding, good stables, and reading dairy or agricultural papers. The poorest combination of features includes scrub herds, poor stables, no silage, and no reading.

CANVASS NO. 9.

Conducted in Wisconsin, 1901-2, with creamery and cheese-factory patrons. C. P. Goodrich, canvasser. 60 herds, 809 cows.

[Average price of milk, 85.2 cents per 100 pounds; average price of butter, 19.3 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	60	809	\$29.88	4,204	185	\$1.20	\$5.94	\$0.71	\$0.161	46	14
Cows:											
Dairy type.....	13	197	31.70	5,059	235	1.48	15.30	.626	.135	13	0
Mixed type.....	16	195	29.25	3,731	160	1.05	1.60	.784	.183	8	8
Best dairy type.....	1	25	28.00	5,809	298	2.04	29.18	.482	.094	1	0
Best beef type.....	1	7	29.00	3,266	152	.96	1.05	.887	.19	0	1
Feed: Silage used.....	6	111	31.50	5,928	260	1.68	21.42	.531	.121	6	0
Results:											
Most profitable herds.....	10	157	31.50	5,559	259	1.61	19.22	.568	.121	10	0
Least profitable herds.....	10	142	31.80	3,237	141	.85	4.84	.985	.225	0	10

NOTES ON CANVASS NO. 9.

The prices of feed given are: Timothy hay \$12, mixed hay \$8, corn stover \$3, silage \$2.50, oats \$28, corn \$21, wheat bran \$19.50, gluten \$24, malt sprouts \$18.50, whole malt \$30; pasture \$5 for the season.

Of the 13 herds of dairy type, 6 use silage. Of the 16 herds of mixed breeding, none use silage. The herds of dairy type return a net profit nine times as great as that of mixed herds. The 6 herds using silage are all of dairy type.

Of the 10 most profitable herds, 8 are of dairy type, 2 are of dual-purpose breeding. All the herds which use silage are in this group also.

Of the 10 least profitable herds, none use silage; 2 are of dairy type, and 8 are of mixed breeding.

The best herd of dairy type consists of 25 Guernsey and Jersey cows. The ration fed includes bran and malt sprouts 6 pounds; silage 30 pounds; fodder corn in the fall; pasture only in the summer. The owner estimates that the added value of the skim milk brings his net profit up to \$40.80 per cow per year.

The best herd of beef type consists of seven Durham grades. The ration is of malt sprouts and grain oats, 6 pounds corn stover, hay, and straw; pasture during summer. Adding the value of the skim milk to the creamery returns, we have a net profit of \$5.48 per cow. The net profit of the best dairy-type herd, thus figured, is more than seven times that of the best beef-type herd.

Some further conclusions drawn from this canvass by the canvasser, Mr. C. P. Goodrich, are:

That heavy feeders, with good cows, stabled in comfort, make more profit than cheap feeders, relying on pasture for cows coming fresh in spring.

That the use of silage increases the quantity of milk about 12 per cent over dry feed of the same kind.

That the cheese factory paid its patrons 92 cents per 100 pounds for 4 per cent milk, while the creamery average for the same grade was 84 cents; this difference of 8 cents per 100 pounds may represent the difference in value between the skim milk and the whey.

CANVASS NO. 10.

Conducted in New York, 1901-2, among members of the Onondaga Milk Association.
W. H. Jenkins, canvasser. 45 herds, 1,022 cows.

[Average price of milk, \$1.066 per 100 pounds.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass.....	45	1,022	\$43.71	5,296	\$1.30	\$13.05	\$0.825	34	11
Cows:									
Dairy type.....	8	166	45.25	6,923	1.67	30.32	.653	7	1
Scrub type.....	5	139	44.60	3,415	0.84	7.05	1.30	1	4
Feed: Silage feeders.....	14	389	42.43	4,968	1.26	10.96	.853	11	3
Stables:									
Good.....	36	817	43.89	5,998	1.35	15.30	.732	27	9
Poor.....	9	204	41.89	4,380	1.12	5.24	.956	7	2
Reading:									
Dairy literature.....	31	713	45.19	5,598	1.34	15.30	.807	24	7
Nothing.....	14	309	41.21	4,629	1.20	8.24	.89	11	3
Results:									
Most profitable herds.....	10	203	45.70	7,684	1.81	36.95	.594	10	0
Least profitable herds.....	10	260	47.90	3,457	.77	-11.08	1.385	0	10

NOTES ON CANVASS NO. 10.

This canvass shows great differences between the herds, due perhaps to the exceptional locality, near a large city (Syracuse). The average milk yield in this canvass is the largest of the whole series of canvasses, and the stables are unusually good. Winter dairying is most profitable. Alfalfa hay is the principal roughage and is fed with a moderate grain ration. The use of silage here is a rather perplexing factor, the results being somewhat contradictory. The alfalfa seems to be more significant than the silage. There is probably unusual force of individuality among the dairy-men in this section.

Nearly every herd in this canvass is made up largely of grade Holsteins, with many high-grade and several pure-bred herds. The ratio of profitable to unprofitable herds is 28 times as great among the dairy-type herds as it is among the scrub herds.

Among the 10 most profitable herds, 5 are of dairy type and 5 are grades of dairy breeds, but of uncertain type. Nine of these herds have good stables, and 9 of the owners are readers.

Among the 10 least profitable herds, only 1 is of dairy type; 3 are dairy grades of uncertain type; 2 are of mixed breeding; and 4 are dairy grades of poor type. This group shows a very high cost of feed, resulting probably from feeding too much grain, while overlooking the great value of the alfalfa in the ration. Eight stables in this group are good, 2 are poor; 7 owners are readers.

The two men who are specially noted as great readers and students of dairying receive, respectively, \$2.21 and \$2.37 for each dollar spent in feed.

The average gain of those who read over those who do not read amounts to \$7.06 per year for each cow.

The average gain of those who have good stables is three times that of those who have poor stables.

CANVASS NO. 11.

Conducted in Marshall County, Ind., 1902-3. C. P. Goodrich, canvasser. 50 herds. 282 cows.

[Average price of milk, 85 cents per 100 pounds; average price of butter fat, 19.4 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	50	282	\$24.96	3,730	166.0	\$1.26	\$6.57	\$0.668	\$0.15	39	11
Cows:											
Dairy type.....	16	94	25.18	4,540	208.5	1.61	15.30	.554	.12	15	1
Scrub type.....	19	124	25.90	3,113	139.0	1.07	1.87	.832	.186	10	9
Feeding:											
Silage used.....	5	45	23.57	4,823	211.3	1.71	16.74	.503	.115	5	0
No silage.....	45	237	25.23	3,502	156.5	1.18	4.64			34	11
Reading:											
Dairy literature.....	6	34	24.06	4,133	181.0	1.46	11.07	.582	.133	6	0
Nothing.....	44	248	25.36	3,640	159.0	1.22	5.58	.691	.159	33	11
Results:											
Most profitable herds.....	10	67	24.40	5,138	229.0	1.82	20.00	.474	.106	10	0
Least profitable herds.....	10	76	26.80	2,561	120.0	.86	-3.72	1.046	.223	0	10

NOTES ON CANVASS NO. 11.

Prices of feed: Ground corn and oats \$17 a ton, wheat bran \$17, oil meal \$30, corn in the ear \$12, timothy hay \$10, clover hay \$8, corn stover \$2 per load, silage \$2 per ton, pasture \$5 per head for the summer.

Quantity of feed: It is estimated that each cow eats during the winter 2 tons of hay or its equivalent in corn stover. Four or five loads of corn stover are estimated to furnish these 2 tons of forage when fed on the ground in the ordinary manner. Silage weighs 25 to 35 pounds to the bushel as taken from the silo.

The production of butter fat is given, instead of that of butter as in previous canvasses.

Herds of dairy type return over eight times the net profit of those of beef or scrub type.

Of the 10 most profitable herds, eight are of dairy type. Of the 10 least profitable herds, none are of dairy type.

The net returns from herds using silage are three times as great as those from the herds not using silage.

Owners who read dairy or agricultural papers receive twice the net profit of those who do not read.

Illustrations from records of single herds.

	Feed cost.		Returns per dollar.	Net profit.
No. 3, dairy type.....	\$26.00	Ration, corn and clover.....	\$1.61	\$15.78
No. 4, beef type.....	25.00	Practically same ration.....	1.03	.89
No. 17, dairy grades.....	27.00	Good food, stable, and care.....	1.74	19.95
No. 7, dairy grades.....	18.50	Poor food, stable, and care.....	0.98	-.33
No. 21, mixed.....	22.00	Care excellent; regular.....	2.02	22.41
No. 23, mixed.....	20.00	Irregular; dairy a side issue.....	1.17	3.39
No. 29, dairy type.....	30.00	Good type, with silage.....	2.03	31.09
No. 19, beef type.....	20.50	Poor type, though profitable with silage.....	1.79	16.16
No. 42, dairy type.....	30.00	Owner student, balanced ration, good stable, and care.....	1.54	16.16
No. 28, scrub type.....	23.00	Scrub farmer and poor feed.....	1.02	.48

CANVASS NO. 12.

Conducted in Geauga County, Ohio, 1903, among cheese-factory patrons. G. L. Poole, canvasser. 100 herds. 1,027 cows.

[Average price of milk, 88.9 cents per 100 pounds.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,027	\$28.20	4,547	\$1.46	\$13.02	\$0.62	92	8
Cows:									
Dairy type.....	50	572	28.86	5,289	1.69	19.91	.545	49	1
Not dairy type.....	29	233	26.51	3,361	1.12	3.18	.785	22	7
Raise heifers.....	33	331			1.71			33	0
Feed: Use silage.....	15	241	31.06	5,501	1.71	22.05	.564	15	0
Stables:									
Excellent.....	16	162	30.35	5,270	1.60	18.21	.576	16	0
Good.....	15	151			1.53			14	1
Fair.....	31	312			1.46			30	1
Poor.....	33	334	26.81	3,954	1.35	9.38	.671	28	5
Reading:									
Dairy literature.....	22	221	29.45	5,585	1.75	22.09	.527	22	0
Agricultural literature.....	37	374			1.51			37	0
Nothing.....	24	243	26.54	3,567	1.19	5.04	.744	16	8
Results:									
Most profitable herds.....	10	127	30.25	6,830	2.15	34.80	.443	10	0
Least profitable herds.....	10	98	27.26	2,835	.90	-2.64	.961	2	8

NOTES ON CANVASS NO. 12.

Herds of dairy type return six times as much net profit per cow as those not of dairy type.

Twenty-six owners who raise heifers from herds of dairy type receive for each dollar invested in feed \$1.80. Seven owners who raise heifers from herds not of dairy type receive for each dollar invested in feed \$1.34.

Every silage feeder makes a profit.

The character of the stable is a fair index to the profit from the herd.

Readers of dairy literature receive four times the net profit of those who do not read. The net profit of readers of general agricultural papers is only slightly above the average for the whole canvass.

Of the 10 most profitable herds, all are of dairy type, 9 owners read, 9 raise heifers, 4 feed silage, 2 have excellent stables, 3 have good stables, 4 fair stables, and 1 a poor stable.

Of the 10 least profitable herds, only 1 is of dairy type, 1 owner reads an agricultural paper, none feed silage, 1 raises heifers, 1 stable is excellent, 2 are good, 2 fair, and 5 poor.

The best combination of features is found in a group of five herds returning for each dollar spent in feed \$2.06. In this group all are of dairy type, all owners read, all feed silage, all raise heifers, all have excellent stables.

Conclusions by the canvasser:

Some men get better profit than others with the same kind of cows and feed.

What pays?

Answer: Comfortable stables, persistent milkers, careful attention, silage, and feed rich in protein.

CANVASS NO. 13.

Conducted in Lorain and Medina Counties, Ohio, 1904. G. L. Poole, canvasser. 87 herds, 635 cows.

[Average price of milk 77.3 cents per 100 pounds. Average price of butter, 15.1 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	87	635	\$26.98	3,858	195	\$1.10	\$2.80	\$0.70	\$0.14	55	32
Cows:											
Dairy type.....	29	244	27.29	4,374	235	1.30	8.10	.624	.12	23	6
Not dairy type.....	34	217	26.88	3,380	165	.92	-2.10	.792	.162	14	20
Raise heifers.....	41	299	.....	.....	.....	1.14	.....	.....	.....	27	14
Feed: Silage fed.....	8	95	27.00	4,596	251	1.42	11.51	.587	.107	7	1
Stables:											
Excellent.....	3	22	27.33	4,704	279	1.61	16.67	.581	.098	3	0
Good.....	20	149	.....	.....	.....	1.12	.....	.....	.....	12	8
Fair.....	20	146	.....	.....	.....	1.11	.....	.....	.....	12	8
Poor.....	40	291	25.91	3,488	178	1.08	1.995	.743	.145	25	15
Reading:											
Dairy literature.....	2	15	28.00	4,736	293	1.71	20.02	.591	.096	2	0
Agricultural literature.....	45	328	.....	.....	.....	1.11	.....	.....	.....	27	18
Nothing.....	31	226	26.48	3,524	179	1.05	1.245	.751	.148	19	12
Results:											
Most profitable herds.....	10	74	26.74	4,884	281	1.66	17.75	.547	.096	10	0
Least profitable herds.....	10	83	28.20	2,845	136	0.71	-8.22	.991	.208	0	10

NOTES ON CANVASS NO. 13.

The ratio of profitable to unprofitable herds is $5\frac{1}{2}$ times as great among herds of dairy type as it is among herds lacking dairy type.¹ The type of 24 herds in the canvass appears to be uncertain. The foundation stock in many herds was largely Durham. Upon this the Holstein-Friesian was crossed in order to increase the quantity of milk produced. Then the Jersey cross was used to enrich the quality of the milk. The results are generally failures as milk producers.

The profit of raising heifers rather than buying cows to renew the herd appears to depend largely upon the type of animals from which the heifers are bred. The ratio of profitable to unprofitable herds is seven times as great among the men who raise heifers from cows of dairy type as it is among those who raise heifers from cows lacking dairy type.¹

The only silage feeder who fails to make a profit feeds cows of mixed breeding and not of dairy type.

Of the 10 most profitable herds, 8 are of dairy type, 4 use silage, 9 owners read agricultural literature (of whom 2 read dairy literature), 5 have good stables, 2 excellent stables, 2 fair stables, and 1 a poor stable; 5 raise heifers.

Of the 10 least profitable herds, 3 are of dairy type, 1 uses silage, 7 owners read agricultural literature, 5 have good stables, 1 fair, and 4 poor, and 4 raise heifers.

Reading agricultural papers which are not specially dairy papers does not seem to bring very much more profit than reading no papers at all.

¹ For explanation in regard to comparison of ratios see footnote to canvass 2, p. 14.

CANVASS NO. 14.

Conducted in Wayne and Franklin Counties, Pa., 1904. Nathan Jenkins, canvasser.
99 herds, 858 cows.

[Average price of milk, 84 cents per 100 pounds; average price of butter, 18 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	99	858	\$29.44	3,250	153	\$0.94	-\$1.85	\$0.90	\$0.192	39	60
Cows:											
Dairy type.....	10	78	30.86	4,508	214	1.32	9.83	.68	.144	10	0
Scrub herds.....	8	59	31.96	2,494	114	.62	-12.08	1.28	.279	0	8
Feed: Silage.....	2	27	30.79	4,338	204	1.36	11.08	.71	.15	2	0
Stables:											
Excellent.....	2	16	30.64	3,825	181	1.12	3.68	.801	.169	2	0
Good.....	9	100				.98				4	5
Fair.....	25	264				1.01				9	16
Poor.....	5	28	32.20	3,218	152	.80	+ 6.44	1.001	.212	1	4
Reading:											
Dairy literature.....	12	122	30.17	3,850	179	1.10	3.02	.784	.169	8	4
Agricultural literature.....	27	217				.99				15	12
Nothing.....	51	433	29.74	3,027	142	.88	- 3.57	.982	.21	15	36
Results:											
Most profitable herds.....	10	65	29.90	4,384	205	1.36	10.90	.68	.145	10	0
Least profitable herds.....	10	92	32.83	2,384	109	.55	-14.70	1.37	.301	0	10
Largest profit.....	1	10	32.58	4,854	236	1.50	16.21	.67	.14	1	0
Greatest loss.....	1	22	31.00	1,283	88	.42	-17.91	2.42	.35	0	1

NOTES ON CANVASS NO. 14.

The first 40 herds of this canvass, in Wayne County, show poor cows, poor care, poor feed, and owners read little.

The next 59 herds are in Franklin County, in the Cumberland Valley, near the Maryland line. Nearly all the land is tillable. The usual rotation is corn, wheat, and grass. The common barn has basement with brick or stone wall, the second story projecting 6 feet or more on one side, with a driveway to second floor on opposite side. Stalls on cross lines. Windows and doors under projections. No basement floor; straw for bedding. Manure accumulates until corn-planting time. Dairying is not chief source of income.

Four herds make a net profit of \$10 per cow or more; 10 herds make a net loss of \$10 per cow or more; 19 herds make a net profit of \$5 per cow or more; 31 herds make a net loss of \$5 per cow or more; 16 herds make a butter average of 200 pounds or more; 83 herds make a butter average less than 200 pounds.

Only 18 herds in this canvass are so reported as to make clear whether they are of dairy type or not. The cost of producing milk and butter is nearly twice as great with scrubs as with cows of dairy type. The average net profit for cows is \$21.91 greater with cows of dairy type than with scrubs.

Of the 10 owners of herds of dairy type 3 read dairy papers, 6 read agricultural papers, and 1 does not read. One of these owners has an excellent stable, 2 have good stables, 4 have fair stables, and 1 has a poor stable.

Of the 8 owners of scrub herds, none read dairy papers, 3 read agricultural papers, and 3 read none (2 not reporting on this point). None of this group are reported as having either good or excellent stables.

Only 2 herds in this canvass are fed silage.

The character of the stabling is reported for only 41 herds in this canvass.

Of the 10 most profitable herds, 7 are of dairy type and 3 of uncertain type; 4 owners read dairy papers, 3 read agricultural papers, 2 read none, and 1 is not reported as to reading. One of the group has a good stable, and 7 have fair stables.

Of the 10 least profitable herds, none are of dairy type, 6 are of scrub type, and 4 are of uncertain type. None of the owners in this group read dairy papers, 3 read agricultural papers, and 6 read none. No stables in this group are reported as either excellent or good.

The largest profit comes to a man who feeds silage, reads dairy literature, has dairy type cattle, raises heifers, and has fair stables.

The greatest loss is in a herd of mixed grades, whose owner does not read and puts other business first.

The ratio of profitable to unprofitable herds is nearly five (4.8) times as great among readers of dairy papers as it is among those who do not read.¹ No report is given as to the reading of 9 owners.

CANVASS NO. 15.

Conducted in vicinity of Andover, Conn., 1904, among cooperative cream-gathering patrons. H. H. Lyon, canvasser. 50 herds, 445 cows.

[Average price of butter fat, 26.98 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	50	445	\$37.02	138.2	\$1.004	\$0.13	\$0.268	24	26
Cows: Dairy type.....	7	88	38.25	161.9	1.18	6.91	.236	5	2
Feed: Silage.....	1	14	38.75	191.3	1.44	17.19	.203	1	0
Stables:									
Good.....	3	55	37.63	157.8	1.28	10.54	.238	3	0
Fair.....	16	155			1.02			11	5
Poor.....	6	46	36.50	111.8	.79	-7.66	.326	0	6
Reading:									
Dairy literature.....	6	83	38.60	182.0	1.31	11.97	.212	6	0
Agricultural literature.....	29	248			.97			13	16
Nothing.....	11	72	36.09	123.0	.89	-3.97	.293	3	8
Results:									
Most profitable herds.....	5	53	38.67	201.2	1.41	15.95	.192	5	0
Least profitable herds.....	5	33	36.87	109.1	.75	-9.37	.337	0	5

NOTES ON CANVASS NO. 15.

Prices of feed: Pasturage \$5 per season; bran \$22 per ton; hay \$12 per ton; cotton-seed meal \$30 per ton; corn fodder \$6 per ton; silage \$3 per ton.

Of the 7 owners of herds of dairy type, all are readers; 3 read dairy papers and 4 read agricultural papers. Two of this group have good stables, 2 have fair stables, and 1 has a poor stable.

The ratio of profitable to unprofitable herds is nearly three (2.7) times as great among the herds of dairy type as it is throughout the canvass as a whole.¹

The one silage feeder has a herd of dairy type, reads dairy papers and has a fair stable.

Of the most profitable herds, all are grades of dairy breeds; 3 owners read dairy literature, 1 has a good stable, 3 have fair stables.

Of the least profitable herds, none are of good dairy type; 3 owners read agricultural literature, 2 read nothing, 3 have poor stables, 1 has a fair stable.

¹ See footnote to canvass 2, p. 14, for explanation as to comparison of ratios.

The man who makes the largest profit has a herd of 16 grades of dairy type, producing an average of 215 pounds of butter fat, returning for each dollar spent in feed \$1.52 and a net profit per cow of \$22.12. He has a good stable and reads dairy papers.

The readers of dairy papers receive for each dollar spent for feed \$0.42 more than the men who do not read.

CANVASS NO. 16.

Conducted in central and northern portions of Vermont, 1904, among patrons of four creameries. H. H. Lyon, canvasser. 100 herds, 1,914 cows.

[Average price of butter fat per pound, 22.25 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,914	\$36.57	150.5	\$0.91	-\$3.20	\$0.242	32	68
Cows: Dairy type.....	12	354	37.21	207.5	1.32	11.90	.179	11	1
Feed: Silage.....	19	642	36.05	160.9	1.04	1.55	.224	12	7
Stables:									
Excellent.....	6	215	36.91	177.2	1.38	14.03	.208	6	0
Good.....	8	261	.....	.....	1.18	.....	.....	7	1
Fair.....	22	419	.....	.....	.94	.....	.....	7	15
Poor.....	15	214	36.53	123.2	.73	- 9.86	.297	0	15
Reading:									
Dairy literature.....	11	189	37.36	205.1	1.25	9.34	.182	10	1
Agricultural literature.....	34	553	.....	.....	.91	.....	.....	11	23
Nothing.....	38	658	36.00	134.6	.80	- 7.20	.267	5	33
Results:									
Most profitable herds.....	10	243	38.37	231.2	1.39	15.15	.166	10	0
Least profitable herds.....	10	146	36.75	92.8	.54	-16.90	.40	0	10

NOTES ON CANVASS NO. 16.

Prices of feed: Pasture \$5 per season; hay \$12 a ton; silage \$3 a ton; bran \$21 a ton; corn meal \$22 a ton; cottonseed meal \$30 a ton; linseed meal \$30 a ton; gluten meal \$24 a ton.

Of the 12 owners of dairy type herds, 7 feed silage, 6 read dairy papers, 1 reads general farm papers, 1 reads none, and 4 are not reported as to reading. Of this group, 5 have excellent stables, 3 have good stables, and 4 are not reported as to stables.

Herds of dairy type return for each dollar's worth of feed 41 cents more than the average of the whole canvass.

Of the 6 owners of excellent stables, all have herds of dairy type except 1, and that herd is of grades of a dairy breed; 3 use silage, 3 read dairy papers, 1 reads a farm paper, and 2 are not reported as to reading.

Of the 8 owners of good stables, 3 have herds of dairy type, 5 feed silage, 4 read dairy papers, 2 read farm papers, 1 reads nothing, and 1 is not reported as to reading.

Of the 11 readers of dairy papers, 6 have herds of dairy type, 3 feed silage, 3 have excellent stables, 4 have good stables, 1 has a fair stable, and 3 are not reported as to stabling.

Men who read dairy literature earn with each dollar spent in feed 45 cents more than men who do not read.

Of the 10 most profitable herds, all are grades of dairy breeds, 8 are of good dairy type; 4 owners feed silage, 6 read dairy literature, 4 have excellent stables, 4 have good stables.

Of the 10 least profitable herds, none are of good dairy type, 6 are grades of dairy breeds, 4 are of mixed breeding; only 1 owner reads agricultural literature, 7 owners read nothing; 1 feeds silage, 4 have poor stables, and the stabling of 6 is not reported.

Seven herds average \$10 or more profit per cow per year. All these are of dairy type, 3 are fed silage, 4 have excellent stables, 4 owners read dairy literature.

Twenty-one herds lose an average of \$10 or more per cow per year. Only 1 of these herds is fed silage, none are of dairy type, none of their owners read dairy literature. Five read agricultural papers, 13 read neither dairy nor agricultural papers; none have either excellent or good stables, 1 has a fair stable, 7 have poor stables.

The man who secures only the average returns has a herd of uncertain type, reads general farm papers (not dairy papers), and has only a fair stable.

CANVASS NO. 17.

Conducted in Minnesota, 1904, among creamery patrons. Frank Kinsley, canvasser.
100 herds, 1,092 cows.

[Average price of butter fat per pound, 21.1 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,092	\$24.90	142.4	\$1.21	\$5.15	\$0.175	66	34
Cows: Dairy type.....	14	155	28.02	219.8	1.65	18.13	.128	14	0
Feed: Silage.....	3	40	29.12	275.0	1.80	23.36	.106	3	0
Stables:									
Good.....	57	560	24.39	156.0	1.20	4.93	.163	41	16
Fair.....	28	275	27.5	114.2	1.14	.....	.....	17	11
Poor.....	15	156	23.40	114.2	1.01	.19	.205	8	7
Reading:									
Dairy literature.....	65	638	25.52	173.0	1.36	9.26	.147	60	5
Nothing.....	35	353	23.80	99.2	.86	-3.21	.24	6	29
Results:									
Most profitable herds.....	10	129	29.54	258.0	1.83	24.66	.115	10	0
Least profitable herds.....	10	103	24.65	82.2	.70	-7.40	.30	0	10

NOTES ON CANVASS NO. 17.

Prices of feed: Corn \$13 per ton; oats \$15 per ton; bran \$16 per ton; silage \$1 per ton; hay \$5 per ton; fodder corn \$4 per ton; oil cake \$26 per ton; pasture (7 months) \$6 per cow. Of these herds, 24 show a profit of \$10 or more per cow per year.

The greatest gain is in a herd of natives, producing 313.5 pounds of fat per cow, returning \$2.35 for each dollar spent in feed, and a net gain of \$37.85 per cow per year. The owner has a good stable and reads dairy literature.

The greatest loss is \$10.51 per cow per year, in a herd of Shorthorns producing an average of 69 pounds of fat per cow. The owner has a poor stable and does not read.

Of the 14 owners of herds of dairy type, all read dairy literature, 10 have good stables, 4 have fair stables, 2 feed silage. The average net profit among herds of dairy type is $3\frac{1}{2}$ times the average for the whole canvass.

Of the 3 owners who feed silage, 2 have herds of dairy type, all read dairy literature, 2 have good stables, and 1 has a fair stable. The average net profit of the silage feeders is $4\frac{1}{2}$ times the average for the whole canvass.

The ratio of profitable to unprofitable herds is 58 times as great among the readers of dairy literature as it is among those who do not read.¹

Of the 10 most profitable herds, 7 are of dairy type, 2 are fed silage, all the owners read dairy papers, 8 have good stables, and 2 have fair stables.

Of the 10 least profitable herds, none are of dairy type, none use silage, 1 owner reads, 5 have good stables, 2 have fair stables, and 3 have poor stables.

¹ See footnote to canvass 2, p. 14, for explanation as to comparison of ratios.

CANVASS NO. 18.

Conducted in Waukesha County, Wis., 1905, among patrons of Wales Creamery. C. P. Goodrich, canvasser. 40 herds, 556 cows.

[Average price of butter per pound, 20.4 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	40	556	\$30.00	202	\$1.38	\$11.29	\$0.148	38	2
Cows:									
Dairy type.....	17	203	30.16	244	1.69	20.81	.124	17	0
Scrub type.....	9	150	29.89	159	1.07	2.09	.188	7	2
Fresh in fall.....	2	25	37.50	244	1.40	15.14	.113	.....	.....
Fresh in spring.....	2	27	23.75	156	1.26	6.32	.152	.....	.....
Reading:									
Dairy literature.....	7	98	29.96	254	1.73	21.87	.118	7	0
Agricultural literature.....	8	112	.....	.....	1.36	10.94	.....	.....	.....
Nothing.....	25	346	29.83	190	1.30	8.95	.157	23	2
Results:									
Best herds.....	8	104	29.75	274	1.91	27.06	.108	8	0
Poorest herds.....	8	127	31.81	161	1.02	.63	.198	6	2
Herd making largest returns per cow.....	1	16	34.00	315	1.97	32.89	.108	1	0
Herd making smallest returns per cow.....	1	25	26.00	117	.88	-3.08	.222	0	1
Herd making largest returns for feed.....	1	12	25.00	257	2.15	28.71	.097	1	0
Herd making smallest returns for feed.....	1	13	32.00	130	.85	-4.67	.246	0	1

NOTES ON CANVASS NO. 18.

Prices of feed: Pasture \$5 per season; timothy hay \$8 per ton; clover hay \$6 per ton; marsh hay \$5 per ton; silage \$2.50 per ton; corn stover \$2.50 per ton; oats ground, \$21.50 per ton; ear corn \$12 per ton; corn, shelled and ground, \$16 per ton; bran \$18 per ton; middlings \$20 per ton.

Only two herds in this canvass are kept at a loss.

Herds of dairy type earn 10 times the net profit of the scrubs.

The largest returns per cow are in a herd of good dairy type coming fresh in the fall and winter, fed clover hay and shredded fodder, with bran and middlings, and with an owner who studies dairy literature.

The smallest returns per cow are in a herd of scrubs coming fresh in winter and spring, fed hay and stover, corn and oats.

The largest returns for a dollar's worth of feed are in a herd of good dairy type, fresh in fall and spring, fed clover and timothy, corn fodder, silage, and bran, and whose owner studies.

The smallest returns for a dollar's worth of feed are in a herd of scrubs, fresh in fall, fed hay and stover, bran and middlings, but fed too little when fresh in the fall, so that they can not bring back their lost flow on spring pasture.

The cows fresh in the fall which are given a heavy grain feed while fresh, and whose butter sells at a comparatively high price in the winter, make a better showing than the cows which come fresh in the spring and are fed no grain; the former show \$8.82 higher net profit, and 14 cents higher return on each dollar's worth of feed given.

The seven readers of dairy literature receive a net profit per cow per year of \$12.92 more than the owners who do not read. For the average herd of 14 cows this means \$180.88 added to the owner's profit for studying his own business.

CANVASS NO. 19.

Conducted in Delaware County, N. Y., 1904-5. Nathan Jenkins, canvasser. 100 herds, 2,408 cows.

Of these herds, 50 supply a cooperative creamery, and the other 50 supply Borden's condensed-milk factory.

[Average price of milk for the canvass, \$1.334 per 100 pounds; average price of milk at cooperative creamery, \$1.38 per 100 pounds; average price of milk at Borden's, \$1.262 per 100 pounds; average price of butter fat per pound, 28.8 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	2,408	\$38.69	4,083	186.4	\$1.44	\$17.25	\$0.947	\$0.205	97	3
Selling to creamery.....	50	1,413	38.29	3,828	186.4	1.42	16.15	1.00	.205	47	3
Selling to Borden.....	50	995	39.16	4,524	.....	1.46	18.26	.865	.....	50	0
Cows:											
Dairy type.....	26	826	39.26	.....	199.3	1.53	20.81	.....	.197	25	1
Not dairy type.....	15	340	34.66	.....	162.4	1.30	10.50	.....	.213	13	2
Feed: Silage.....	12	382	40.12	4,026	194.2	1.44	17.73	.996	.206	12	0
Stables:											
Excellent.....	53	1,403	40.12	4,160	206.1	1.50	20.06	.964	.195	53	0
Good.....	29	647	.....	.....	.....	1.44	.....	.....	.....	.....	.....
Fair.....	5	100	.....	.....	.....	1.49	.....	.....	.....	.....	.....
Poor.....	13	258	36.55	3,296	143.0	1.15	5.48	1.109	.255	10	3
Reading:											
Dairy literature.....	18	549	39.88	4,162	202.1	1.50	19.94	.958	.148	18	0
Agricultural literature.....	49	1,200	.....	.....	.....	1.47	.....	.....	.....	.....	.....
Nothing.....	33	659	38.37	3,718	174.0	1.34	13.05	1.032	.22	31	2
Results:											
Best herds.....	10	277	40.64	5,128	260.0	1.86	34.93	.792	.156	10	0
Poorest herds.....	10	208	36.17	2,734	132.6	1.00	.07	1.32	.272	7	3

NOTES ON CANVASS NO. 19.

Borden's prices for milk ranged from 90 cents in June to \$1.65 in December, favoring milk of low butter-fat content, prohibiting silage and distillers' grains.

The 26 herds of dairy type have pure-bred bulls and raised their heifers. The 15 herds not of dairy type use grade bulls. The dairy type cows return twice as much net profit as the scrubs.

Forty-three herds show a profit per cow per year of over \$20. The 10 best herds show a profit per cow per year of over \$33. Only 3 herds show an actual loss.

Of the 10 best herds, 7 are of dairy type, and the other 3 are grades of dairy breeds. Nine owners in this class read dairy literature, 8 have excellent stables, and 2 have good stables.

Of the 10 poorest herds, only 3 are of dairy type; only 3 owners read; 6 have poor stables.

Of the 3 herds showing an actual loss, all have poor stables, 2 use grade bulls; and only 1 owner reads.

The neglect of reading in this canvass means the loss of one-third of the net profit received by readers of dairy literature.

Excellent stables show more than three times the net profit of poor stables in this canvass.

CANVASS NO. 20.¹

Conducted in Butler and Jackson Counties, Mich., 1905, among creamery patrons.
M. W. Clark, canvasser. 100 herds, 849 cows.

[Average price of milk per 100 pounds, \$1.01; average price of butter fat, 23.25 cents; average butter-fat test, 4.37 per cent.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	849	\$32.12	4,093	177.4	\$1.25	\$8.14	\$0.784	\$0.181	78	22
Cows:											
Dairy type.....	10	130	24.77	4,430	204.0	1.96	23.82	.559	.121	10	0
Scrub type.....	10	69	38.57	3,542	158.5	1.01	.39	1.088	.243	5	5
Feed:											
Dry fed—											
Fed dry fodder.....	82	620	35.44	3,971	174.0	1.11	3.91	.892	.204	61	21
Most profitable herds of those fed dry fodder.....	20	127	31.85	4,606	.....	1.56	17.73	.691	.....	20	0
Most profitable dry-fed herds fresh in spring.....	5	30	28.67	4,877	.....	1.66	18.96	.587	.....	5	0
Most profitable dry-fed herds fresh in fall.....	5	34	30.10	4,020	.....	1.37	11.23	.771	.....	5	0
Unprofitable dry-fed herds.....	10	90	43.40	2,997	.....	.63	-15.83	1.45	.....	0	10
Silage fed—											
Fed on silage.....	18	229	27.79	4,398	192.2	1.66	18.28	.631	.145	17	1
Best herds silage fed ²	10	150	25.44	4,894	.....	2.01	25.76	.52	.....	10	0
Pure-bred, silage fed, fresh in spring ³	3	59	23.15	4,452	.....	2.21	27.96	.52	.....	3	0
Best grades, fresh in fall, fed silage and grain ⁴	3	47	35.67	4,989	.....	1.38	13.77	.715	.....	3	0
Grades fresh in spring, fed silage without grain ⁵	2	19	19.63	4,872	.....	2.36	26.82	.402	.....	2	0
Poorest silage fed.....	3	49	32.54	3,762	.....	1.14	4.54	.864	.....	2	1
Stables:											
Excellent.....	11	151	27.10	4,749	206.0	{ 1.98	21.84	.571	.131	{ 11	0
Good.....	27	208	.....	.....	.....	{ 1.68	.....	.....	.....	{ 27	0
Fair.....	39	313	.....	.....	.....	{ 1.08	.....	.....	.....	{ 29	10
Poor.....	23	177	41.21	3,960	173.0	.97	-1.24	1.04	.238	9	14
Reading:											
Dairy literature.....	37	358	32.21	4,432	193.0	1.39	12.56	.726	.167	31	6
Agricultural literature.....	28	227	.....	.....	.....	1.37	.....	.....	.....	22	6
Nothing.....	30	225	33.00	3,888	168.0	1.19	6.27	.849	.196	20	10
Results:											
Most profitable herds.....	10	96	27.30	5,434	237.7	2.11	29.94	.504	.115	10	0
Least profitable herds....	10	84	43.75	2,952	118.5	.62	-16.60	1.48	.37	0	10

¹ Special attention was given in this canvass to the relative advantages of silage and dry fodder.

² Compare with 20 best dry fed.

³ Compare with 5 best dry fed, fresh in spring.

⁴ Compare with 5 best dry fed, fresh in fall.

⁵ Compare with dry fed, fresh in spring.

NOTES ON CANVASS No. 20.

Stables excellent and good are averaged together. The combined average return for one dollar's worth of feed is \$1.81.

Of the entire canvass, 65 herds (505 cows) are Durhams and Durham grades, and of this group 72 per cent earn a profit, while 28 per cent make a loss. Thirty-five of the 100 herds (344 cows) are Jersey and Jersey grades, and of these 81.6 per cent return a profit, while 18.4 per cent make a loss. The averages for these two groups are not available. The 10 herds designated in the table as dairy type are all headed by pure-bred bulls of dairy breeds; the 10 herds designated as scrub type are headed by grade

bulls. While owners of herds of good dairy type receive nearly \$2 for each \$1 spent in feed, the owners of scrubs barely get their money back.

Comparison of dry-fed with silage-fed herds is favorable to silage by \$7.65 less cost of feed per cow, by 427 pounds more milk, by 18.2 pounds more butter fat, by \$0.55 more returned for each \$1 spent for feed, by \$14.37 more net returns per cow, by \$0.261 per 100 pounds less food cost of milk, and by \$0.059 per pound less food cost of butter fat.

Of the 18 silage-fed herds, 7 are of good dairy type, none are of scrub type, 9 have excellent stables, 5 have good stables, 4 have fair stables, 10 owners read dairy papers, 5 read farm papers, 3 read none.

Of the 82 dry-fed herds, 3 are of good dairy type, 10 are of scrub type, 2 have excellent stables, 22 have good stables, 35 have fair stables; all the poor stables in the canvass (23) are in this group; 27 owners read dairy papers, 23 read farm papers, 27 read none.

Of the 10 most profitable herds, 5 are of dairy type, 4 are fed silage, 5 have excellent stables, and 8 owners read dairy literature.

Of the 10 least profitable herds, 6 are scrub, none are fed silage, 7 have poor stables, and only 2 of the owners are readers.

The better half of all these 100 herds average a net gain of \$19.05 per cow per year, ranging from \$7.82 to \$34.27.

The poorer half average a net loss of \$3.24 per cow per year, ranging from a gain of \$7.80 to a loss of \$28.90.

All of the most successful dairymen who are owners or managers read dairy literature. Only 6 of the 22 losing herds are owned by readers of dairy papers.

The ratio of profitable to unprofitable herds is more than 2½ times as great among the readers of dairy papers as it is among those who do not read.¹

CANVASS NO. 21.

Conducted in vicinity of Ellisburg, Jefferson County, N. Y., 1906. T. H. Staplin, canvasser. 100 herds, 1,843 cows.

[Average price of milk per 100 pounds, \$1.13.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,843	\$35.60	4,536	\$1.44	\$15.68	\$0.784	91	9
Cows:									
Dairy type.....	19	397	34.26	5,340	1.77	26.47	.641	19	0
Pure-bred herds.....	3	62	36.46	6,781	2.05	38.17	.537	3	0
Best grades.....	3	37	37.79	5,791	1.72	27.32	.652	3	0
Best mixed grades.....	3	60	43.88	5,950	1.68	25.35	.737	3	0
Feed:									
Silage-fed herds.....	53	1,118	36.23	4,728	1.42	15.15	.766	51	2
Dry-fed herds.....	47	725	34.90	4,328	1.47	16.29	.806	40	7
Best silage-fed herds.....	5	86	39.88	6,701	1.88	35.19	.595	5	0
Best dry-fed herds.....	5	110	38.11	5,617	1.71	27.16	.678	5	0
Stables:									
Excellent.....	33	653	38.10	5,057	1.50	19.05	.753	33	0
Good.....	40	721			1.44			37	3
Fair.....	19	344			1.32			15	4
Poor.....	6	73	39.01	4,039	1.17	6.63	.965	4	2
Reading:									
Dairy literature.....	17	340	39.18	5,513	1.59	23.12	.71	17	0
Agricultural literature.....	50	920			1.43			46	4
Nothing.....	24	416	38.26	4,537	1.34	13.01	.845	19	5
Results:									
Best herds.....	10	152	32.13	5,715	1.99	32.01	.562	10	9
Unprofitable herds.....	9	133	39.65	3,051	.80	-7.71	1.30	0	9
Best combination of features.....	10	217			1.85			10	0

¹ For explanation as to comparison, see footnote to canvass 2, page 14.

NOTES ON CANVASS NO. 21.

Of the best 10 herds, 7 are of good dairy type, 1 is dairy grades, and 2 are of mixed breeding; 7 are fed silage; 5 have excellent stables, 3 have good stables, 2 have fair stables; 3 owners read dairy papers, 5 read farm papers, and 2 read none.

Of the 9 unprofitable herds, none are of good dairy type, 3 are dairy grades, 6 are mixed or natives; 2 are fed silage; none have excellent stables, 3 have good stables, 4 have fair stables, and 2 have poor stables; no owner reads dairy papers, 2 read farm papers, and 5 read none.

Of the 16 herds which average a net profit per cow per year of \$25 or more, 3 are pure bred, 9 dairy grades, and 4 mixed breeding; 8 have excellent stables, 6 have good stables; 4 owners read dairy literature, 9 read agricultural literature, and 11 feed silage.

The best combination of features is of herds of good dairy type using silage, having good or excellent stables, whose owners read dairy or farm papers. This group is a good illustration of the profitableness of good dairy equipment and practice.

COMPARISON WITH EARLIER CANVASS.

In 1887 the original cow census was taken in this town by C. W. Jennings, in which the total cow population of the town was included. There were 367 herds, kept at an average cost per cow per year of \$36.26, and returning their owners an average of \$31.74, showing a net loss of \$4.62, and this with the reckoning of returns from cheese, butter, calves, skins, cream, milk, and skim milk; whereas in the canvass of 1906 the 100 representative herds show an average cost of keeping of \$35.60 and returns from creamery checks of \$51.28, making an average profit of \$15.68 per cow yearly.

In 1887, of the 367 herds, 48 produced for their owners less than \$25 total receipts per cow yearly, and only 3 produced more than \$55. In 1906, of the 100 herds reported, only 1 produced less than \$25 return and 31 exceeded \$55, per cow, yearly.

CANVASS NO. 22.

Conducted in Iowa, 1906. Three counties in northeastern part of State. Patrons of eight creameries. Frank Kinsley, canvasser. 100 herds, 1,062 cows.

[Average price of butter fat, 22.7 cents per pound.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,062	\$28.23	154.0	\$1.24	\$6.78	\$0.183	75	25
Cows:									
Dairy type.....	17	172	28.33	211.1	1.74	20.91	.134	16	1
Dual purpose.....	83	890	27.09	143.0	1.19	5.16	.197	59	24
Difference in favor of dairy-bred cows.....			-1.24	68.1	.55	15.75	.063		
Feed: Silage fed.....	4	50	29.44	239.0	1.85	25.15	.123	4	0
Stables:									
Excellent.....	22	263	29.82	170.0	1.58	9.05	.175	19	3
Good.....	44	474			1.15			31	13
Fair.....	27	267			1.23			21	6
Poor.....	7	58	29.77	143.0	1.09	2.68	.208	4	3
Reading:									
Owners read dairy literature.....	50	559	28.02	178.5	1.48	13.45	.157	45	5
Owners do not read.....	46	463	27.70	121.9	1.01	2.27	.227	26	20
Difference in favor of owners who read.....			-.32	56.6	.47	13.18	.07		
Results:									
Best herds.....	25	273	28.17	209.7	1.74	20.83	.127	25	0
Unprofitable herds.....	25	257	28.92	100.0	.78	-6.33	.29	0	25
Difference in favor of best herds.....			.75	109.7	.96	27.16	.163		
Best single herd.....	1	14	29.00	322.0	2.48	42.92	.09	1	0
Poorest single herd.....	1	6	28.00	63.0	.43	-16.03	.44	0	1
Difference in favor of best herd.....			-1.00	259.0	2.05	58.95	.35		

NOTES ON CANVASS No. 22.

Stables excellent and good are averaged together in this table. The combined average return for one dollar's worth of feed is \$1.30.

Of the 83 herds (890 cows) of the dual-purpose type, 30 per cent do not pay for their feed. Of the 17 herds (172 cows) of the dairy type, only 6 per cent do not pay for their feed.

The 172 dairy-bred cows produce on the average \$15.75 more net profit than the 890 dual-purpose cows, return 55 cents more for each dollar spent in feed, and reduce the food cost of butter fat by 6.3 cents per pound, though consuming \$1.24 more feed per cow.

The best single herd is of 14 Jerseys registered, line bred for 12 years, fresh in the fall, fed silage, with an excellent stable, and a reading owner.

The poorest single herd is of 6 Shorthorn grades, fresh in the fall, fed no silage, with a good stable, but with no reading by the owner.

The silage-fed cows consume \$1.21 more feed, make \$18.37 more net profit, return 61 cents more for each dollar spent on feed, and reduce the food cost of butter fat by 6 cents per pound, as compared with the average of the whole group, notwithstanding that one of the four herds does not pay for the feed consumed.

Fifty herds (559 cows), practically one-half of the whole group, whose owners read dairy papers, produce \$318.19 more net profit than the whole group, return 24 cents more for one dollar invested in feed, and reduce the cost of butter fat 2.6 cents per pound. Of these herds only 5 do not pay for the feed consumed. (The statement that these 50 herds make more profit than the whole canvass of 100 herds, is based on the fact that the remaining 50 herds make an average loss. Of the losing 50, 46 owners do not read, while 4 are not reported as to reading.)

The 46 herds whose owners are reported as not reading dairy papers yield a total net profit of \$125. They yield an average of 121.9 pounds of butter fat per cow, return \$1.01 for each dollar invested in feed, and produce butter fat at a food cost of 22.7 cents per pound; 20 herds of this group do not pay for the feed consumed.

The ratio of profitable to unprofitable herds, which indicates the probability of success, is nearly seven times (6.9) as great among the readers as it is among those who do not read.¹

In one herd where all the cows were tested and records kept during the year 1905, 45 per cent of the cows were found to be unprofitable and were sold during the following year. The remaining 55 per cent, with better feed and care, produced more butter fat, more gross cash returns, and more than double the returns for each dollar invested in feed; and produced butter fat at less than half of the food cost of the previous year.

If the summaries of this canvass be applied to the whole State, with 1,600,000 cows, we might say that, if all the cows were of dairy type, the net gains to the State would be 88,000,000 pounds of butter fat, valued at \$20,000,000. If all the cows were fed silage, the gain would be 132,000,000 pounds of fat, or \$28,000,000. If all the dairymen were students of dairy literature, the gain would be 39,000,000 pounds of fat, or \$10,000,000. If the weeding-out process were applied to all the herds, as in the one case specified above, the gain would be \$11,000,000 for the increased fat production and \$19,000,000 by the saving in feed now given to robber cows which should be sent to the block.

¹For explanation as to comparison of ratios, see footnote to canvass 2, page 14.

CANVASS NO. 23.

Conducted in New Hampshire, 1906, among creamery patrons. H. H. Lyon, canvasser. 100 herds, 853 cows.

[Average price of butter fat, 23 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for 1 st worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass	100	853	\$35.67	144.4	\$0.93	-\$2.50	\$0.247	41	59
Cows:									
Dairy type	65	566	36.04	155.2	.99	-.20	.238	35	30
Not dairy type	35	287	35.00	121.6	.76	-8.41	.287	6	29
Difference in favor of dairy type			1.04	33.6	.23	8.21	.049		
Feed: Silage fed	18	196	34.67	158.7	1.006	0.20	.22	11	7
Stables:									
Good	41	349	37.40	175.1	1.10	3.74	.214	31	10
Fair	37	315			.87			8	29
Poor	18	153	34.44	93.9	.60	-13.78	.367	0	18
Reading:									
Dairy literature	20	170	36.95	188.7	1.19	7.02	.196	19	1
Agricultural literature	57	486			.90			19	38
Nothing	22	187	34.59	130.3	.73	-9.34	.265	1	21
Results:									
Best herds	10	118	38.30	213.3	1.31	12.11	.179	10	0
Poorest herds	10	99	34.00	79.2	.51	-16.46	.43	0	10
Largest gain from single herd	1	7	25.02	249.2	1.87	21.80	.101	1	0
Largest loss from single herd	1	8	36.00	78.2	.48	-18.88	.46	0	1

NOTES ON CANVASS No. 23.

The largest gain from a single herd in this canvass is from one consisting of Jersey grades (no pure-bred herd in this canvass), fresh in the fall, with good stable; owner reads dairy literature, and feeds a well balanced ration.

The largest average loss from a single herd is found in a herd of Hereford grades, fresh in the spring and fall, fed a fair ration and kept in a fair stable, the owner reading agricultural papers.

Of the 10 best herds, 3 are fed silage, 9 are grades of dairy breeds, 9 have good stables, 7 owners read dairy literature, 3 read agricultural literature. Every herd in this group makes an annual profit per cow of \$9.41 or more (this is the average per cow of the lowest herd).

Of the poorest 10 herds, only 1 is fed silage, only 3 are grades of dairy breeds, 1 has a good stable, 2 have fair stables, and 7 have poor stables; none of the owners read dairy literature, 6 read agricultural literature, 4 read nothing. The best herd in this group loses an average of \$15.55 per cow per year, the other herds losing still more.

Of the 20 readers of dairy papers, all but 4 have dairy bred herds, all but 3 have good stables, 3 have fair stables, 8 have silos, 12 feed good rations and 2 fair.

The average cost of keeping the profitable cows is \$37. The average cost of keeping the losing cows is \$34.82. The highest cost of feeding is \$44; the lowest cost of feeding is \$31.

Of the herds that make a profit, 41 in number, 23 are fed well-balanced rations, 11 are fed silage, 15 are fed rations low in protein. Net profit on cows fed well-balanced rations, \$7.31; on those fed low protein, \$5.08.

Of the 59 herds that make a loss, 12 are fed a well-balanced ration (loss \$5.55), 7 are fed silage (loss \$7.18), and 49 are fed a ration low in protein (loss \$8.87).

On farms where profit is made, silos are nearly three times as frequent, feeds rich in protein are three times as frequent, readers of agricultural papers are three times as frequent, as on farms where loss ensues. A man who reads good dairy literature

appears to have 19 chances of success to one of failure; while the man who reads nothing has one chance of success to 21 of failure. Improved blood gives five times the chance of success that the common mixed herd possesses.¹

CANVASS NO. 24.

Conducted in Massachusetts, 1907. Five creameries in central and western Massachusetts, representing the cream-gathering plan. H. H. Lyon, canvasser. 50 herds, 473 cows.

[Average price of butter fat, 26.8 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter-fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	50	473	\$35.51	139.7	\$1.02	\$0.74	\$0.254	19	31
Cows:									
Dairy bred.....	15	135	36.34	170.2	1.14	5.17	.214	9	6
Mixed breeds.....	35	338	35.14	126.6	.97	-1.14	.277	10	25
Stables:									
Good.....	15	147	37.80	172.4	1.16	6.05	.219	11	4
Fair.....	26	241	36.53	165.8	.96	.....	.....	7	19
Poor.....	9	85	33.89	117.9	.89	-3.73	.287	1	8
Reading:									
Dairy literature.....	19	154	36.53	165.8	1.12	4.38	.22	11	8
Agricultural literature.....	21	235	36.53	165.8	.96	.....	.....	7	14
Nothing.....	10	84	33.60	112.4	.87	-4.37	.299	1	9
Results:									
Best herds.....	5	47	40.20	228.0	1.43	17.50	.185	5	0
Poorest herds.....	5	47	34.00	91.5	.75	-8.54	.371	0	5

NOTES ON CANVASS NO. 24.

All the best five herds are of dairy type, except one. All owners are readers; all but one have good stables. Range of profit per cow annually \$8.52 to \$25.75.

Of the 5 poorest herds, 2 are of dairy type, and 3 of mixed breeding. One owner reads dairy literature; 2 read agricultural literature; 2 read nothing; 1 has a good stable; 2 have fair stables; and 2 poor stables. Range in amount of net loss by these herds, \$7.40 to \$11.10 per cow per year.

The use of silage in this canvass is inconclusive, only 4 herds being reported as using silage.

¹ Compare the ratios 35:30 and 6:29. See footnote to canvass 2, p. 14.

CANVASS NO. 25.

Conducted in three counties in northwestern Illinois, 1907. Frank Kinsley, canvasser. 100 herds, 1,400 cows.

[Patrons of eight creameries. About three-quarters of these farmers are tenant farmers, the usual plan being for the owner to furnish one-half the stock and seed, in addition to the real estate, and receive one-half the proceeds. Acreage of farms, 160 to 320. Land values, \$60 to \$150 an acre. Average price of butter fat per pound, 27.5 cents.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvass.....	100	1,400	\$32.76	145.1	\$1.21	\$7.03	\$0.245	70	30
Cows:									
Dairy type.....	27	385	31.73	178.0	1.54	17.23	.185	27	0
Dual purpose.....	73	1,015	33.27	133.0	1.10	3.50	.27	43	30
Difference in favor of dairy-type herds.....			1.54	45.0	.44	13.73	.085		
Feed: Silage fed.....	7	184	29.00	197.0	1.87	25.18	.161	7	0
Stables:									
Very good.....	29	406	31.10	153.0	1.47	10.95	.208	26	3
Good.....	26	364			1.22			20	6
Fair.....	43	602			1.07			23	20
Poor.....	2	28	32.05	119.0	1.02	.64	.269	1	1
Reading:									
Dairy papers.....	27	416	32.48	180.0	1.53	17.21	.19	27	0
Farm papers.....	41	552	32.97	150.0	1.25	8.27	.235	30	11
Nothing.....	32	432	32.31	110.0	.94	-1.94	.30	13	19
Difference per cow in favor of readers of dairy papers over nonreaders.....			-0.17	70.0	.59	19.15	.11		
Results:									
Best herds, one-quarter of canvass.....	25	340	33.07	204.0	1.68	22.68	.16	25	0
Poorest herds, one-quarter of canvass.....	25	360	33.11	97.0	.80	-6.45	.342	0	25
Difference in favor of best herds.....			.04	107.0	.88	29.13	.182		
Most economical producers.....	10	363	32.48	237.7	2.01	32.93	.138	10	0
Least economical producers.....	10	139	31.10	84.0	.74	-7.98	.37	0	10
Difference in favor of the most economical producers.....			-1.38	154.0	1.27	40.91	.232		

NOTES ON CANVASS NO. 25.

Stables very good and good are averaged together in the table. The combined average return for one dollar's worth of feed is \$1.35.

The 385 dairy-bred cows produced \$3,081.05 more net profit than the 1,015 dual-purpose cows. They return 44 cents more for each dollar in feed and produce butter fat at a cost of 8.5 cents per pound less.

Of the 27 dairy-bred herds, 12 have very good stables, 7 have good stables, 8 have fair stables. Only 1 of these owners does not read.

The 7 herds using silage are fed at a cost of \$3.76 less and produce a profit \$18.15 more, return for each dollar's worth of feed 66 cents more, and produce butter fat at a cost per pound 8.4 cents less than the average of the whole canvass.

The 10 herds producing with greatest economy produce butter fat at a cost of from 9.5 to 16 cents per pound, and return for every dollar spent in feed from \$1.73 to \$2.87. Four of these are fed silage; the owners all read; 7 have very good stables; 1 has a good stable; 2 have fair stables; 7 herds are dairy bred; 3 dual purpose.

Of the 10 least economical herds, none are of dairy type; only 3 owners read; 2 have very good stables; 2 have good stables; 6 have fair stables.

Of the 10 herds producing with greatest economy, 7 owners read dairy papers and 3 read farm papers. Of the 10 producing with least economy, 3 owners read farm papers and 7 read none.

Of the 27 readers of dairy papers, 14 have herds of dairy type, 13 have dual purpose; 6 feed silage; 13 have very good stables; 5 good, and 9 fair. All these herds are profitable.

Of the 41 herds whose owners read farm papers, only 30 are profitable and 11 are unprofitable; 1 uses silage; 12 herds are of dairy type and 29 dual purpose; 11 have very good stables, 16 good stables, and 14 fair stables.

Of the 32 owners who do not read, only 1 has a herd of dairy type; none use silage; 13 of these herds are profitable and 19 are unprofitable; 5 have very good stables, 5 good stables, 20 fair stables, and 2 poor stables.

All the owners of very good stables except 5 are readers; 20 owners of good stables are readers; 23 owners of fair stables are readers; and both owners of poor stables answered no in regard to reading.

CANVASS NO. 26.

Conducted in vicinity of Bainbridge, N. Y., 1908. Creamery patrons. Six years later than canvass No. 8 of patrons of the same creamery. H. H. Lyon, canvasser. 100 herds, 1,724 cows.

[Average price of milk, \$1.42; hay, \$12 a ton; grain, \$30 a ton; silage, \$3 a ton.]

Comparisons.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Profitable herds.	Unprofitable herds.
Total of canvass	100	1,724	\$46.78	4,455	\$1.36	\$17.01	\$1.05	83	17
Cows:									
Dairy type	49	916	49.03	5,334	1.60	29.58	.92	49	0
Mixed breeds	51	809	44.64	3,600	1.11	4.91	1.24	34	17
Fresh in fall	5	43	51.40	5,506	1.66	33.90	.933	5	0
Fresh in spring	32	443	43.30	3,577	1.10	4.33	1.20	20	12
Feed: Silage fed	18	469	48.00	5,123	1.58	27.84	.937	17	1
Stables:									
Very good	10	184	49.40	5,032	1.49	24.05	.981	9	1
Good	55	1,025	48.23	4,911	1.50	24.15	.982	53	2
Fair	30	468	44.17	3,670	1.13	5.58	1.203	20	10
Poor	5	58	41.40	2,805	.92	-3.46	1.44	1	4
Reading:									
Dairy literature	13	287	49.08	5,380	1.62	30.39	.912	13	0
Nothing	23	377	43.70	3,261	1.02	.87	1.34	11	12
Results:									
Best herds	10	162	52.45	6,582	1.88	46.45	.796	10	0
Poorest herds	10	173	43.60	2,662	.83	-7.19	1.64	0	10

NOTES ON CANVASS NO. 26.

Of the 10 best herds, all are of dairy type, 3 are fresh in the fall, 1 in the spring; 3 have very good stables, 7 have good stables. Three owners read dairy literature, 7 read farm papers; 4 herds use silage.

Of the 10 poorest herds, none are of dairy type; 6 are fresh in the spring, 4 in the spring and fall; 1 has a very good stable, 2 have good stables, 5 have fair stables, and 2 have poor stables; 1 owner reads a farm paper, 9 read nothing; 1 herd uses silage.

Of the dairy-type herds, 4 are fresh in the fall and 3 in the spring, 39 in spring and fall, 3 not reported; 5 have very good stables, 41 have good stables, 3 have fair stables; 11 owners read dairy literature, 36 read farm papers, 1 reads nothing, and 1 is not reported; 16 herds use silage.

Of the mixed, native, and common herds, 29 are fresh in the spring, 1 is fresh in the fall, 20 fresh in spring and fall, and 1 not reported; 5 have very good stables, 14 have good stables, 27 have fair stables, and 5 have poor stables; 2 owners read dairy literature, 27 read farm papers, and 22 read nothing; 2 herds use silage.

Of the 5 herds fresh in the fall, 4 are of dairy type, 1 uses silage; 1 has a very good stable, 3 have good stables, and 1 has a fair stable; 2 owners read dairy literature and 3 read farm papers.

Of the 32 herds fresh in the spring, only 3 are of dairy type, none use silage; 2 have very good stables, 6 have good stables, 21 have fair stables, and 3 have poor stables; 1 owner reads dairy literature, 17 read farm papers, and 14 read nothing.

Of the 18 herds using silage, only 1 is unprofitable, and that is not of dairy type, and the owner is not a reader; 16 herds are of dairy type; 1 is fresh in the fall, 17 are fresh in spring and fall; 2 have very good stables, 16 have good stables; 7 owners read dairy literature, 10 read farm papers, and 1 reads nothing.

Of the 10 herds having very good stables, 5 are of dairy type; the 1 unprofitable herd is of scrub type, and the owner does not read; 2 herds use silage; 1 is fresh in the fall, 2 are fresh in the spring, and 7 are fresh in spring and fall; 2 owners read dairy literature, 6 read farm papers, and 2 read nothing.

Of the 5 herds occupying poor stables, all are of scrub type, none use silage; 3 are fresh in the spring, 1 fresh in the spring and fall, and 1 not reported; 2 owners read farm papers and 3 read nothing.

Of the 13 owners who read dairy literature, 11 have dairy type herds, 7 use silage; 2 have very good stables, 9 have good stables, 2 have fair stables; 2 herds are fresh in the fall, 1 in the spring, and 10 in spring and fall.

Of the 23 owners who do not read, only 1 has a dairy-type herd and only 1 feeds silage; 2 have very good stables, 4 have good stables, 14 have fair stables, and 3 have poor stables; 13 herds are fresh in the spring and 10 in spring and fall.

GENERAL SUMMARY OF THE CANVASSES.

The following table shows a comparison of the 26 canvasses, taking the totals and averages of each canvass separately, together with totals and general averages for the whole series of canvasses. The features particularly discussed in each canvass are indicated by initial letters in the last column of the table, as follows:

- D. Type of cows (dairy type or lacking dairy type).
- F. Freshening of cows in different seasons.
- H. Raising heifers to build up herd.
- E. Use of silage (ensilage).
- C. Use of soiling crops.
- P. Use of purchased or home-grown protein.
- A. Use of alfalfa.
- S. Character of stabling.
- R. Reading dairy literature, or general agricultural papers, or neglect of reading.
- B. Patrons of Borden's condensing factory compared with patrons of a cooperative creamery.

SUMMARY A.

General summary of canvasses.

Serial No.	Location, and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Price of milk per 100 pounds.	Price of butter per pound.	Price of butter fat per pound.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.	Features discussed (see note).
1	Wisconsin, 1899, Jefferson County.	100	1,804	\$29.33	4,990	233	.....	\$0.886	\$0.188	.....	\$1.50	\$14.62	\$0.588	\$0.126	.....	98	2	ED SP.
2	Iowa, 1899, five counties.	100	882	26.05	3,600	159	.....	.807	.194	.....	1.16	4.16	.702	.169	.....	62	38	EDR.
3	Ohio, 1899-1900, five counties.	100	994	26.58	4,048	214	.....	1.050	.198	.....	1.60	15.94	.656	.124	.....	97	3	ED S.
4	New York, 1900, Delaware and Otsego Counties.	100	1,704	31.99	3,623	188	.....	.930	.18	.....	1.05	1.60	.883	.17	.....	53	47	EDRSC.
5	Pennsylvania, 1901, Susquehanna County.	60	663	33.04	3,879	.....	.....	1.056	.....	.....	1.26	8.63	.852	.....	.....	39	11	EDRS.
6	Wisconsin, 1901, Dunn County.	52	647	26.96	4,796	222	.....	.826	.178	.....	1.47	12.63	.562	.122	.....	51	1	D.
7	New York, 1901-2, Onondaga County.	80	948	30.07	3,981	184	.....	.893	.193	.....	1.19	5.79	.755	.163	.....	54	26	DRSA.
8	New York, 1901-2, Bainbridge creamery.	100	1,553	38.10	3,908	.....	.....	.995	.....	.....	1.02	.89	.975	.....	.....	58	42	EDRS.
9	Wisconsin, 1901-2, creamery and cheese factory.	60	809	29.88	4,204	185	.....	.852	.193	.....	1.20	5.94	.71	.161	.....	46	14	ED.
10	New York, 1901-2, Onondaga Milk Association.	45	1,022	43.71	5,296	.....	.....	1.066	.....	.....	1.30	13.05	.825	.....	.....	34	11	EDRSA.
11	Indiana, 1902-3, Marshall County.	50	282	24.96	3,730	.....	166	.850	.....	\$0.194	1.26	6.57	.668	.....	\$0.15	39	11	EDR.
12	Ohio, 1903, Geauga County, cheese factory.	100	1,027	28.20	4,547	.....	.....	.889	.....	.....	1.46	13.02	.62	.....	.....	92	8	EDRSH.
13	Ohio, 1904, Lorain and Medina Counties.	87	635	26.98	3,858	195	.....	.773	.151	.....	1.10	2.80	.70	.14	.....	55	32	EDRSH.
14	Pennsylvania, 1904, Wayne and Franklin Counties.	99	858	29.44	3,250	153	.....	.840	.18	.....	.94	-1.85	.90	.192	.....	39	60	EDRS.
15	Connecticut, 1904, Andover creamery.	50	445	37.02	.....	.....	138.2	.....	.....	.27	1.004	.13	.....	.....	.268	24	26	EDRS.
16	Vermont, 1904, four counties, central north.	100	1,914	36.57	.....	.....	150.5	.....	.....	.222	.91	-3.20	.....	.....	.242	32	68	EDRS.

17	Minnesota, 1904, cream- ery.	100	1,092	24.90	.....	.....	142.4	.....	.211	1.21	5.15	.....	.....	.175	66	34	EDRS.
18	Wisconsin, 1905, Wau- kesha County.	4C	556	30.00	.....	202	.....	.....	.204	1.38	11.29	.....	.148	.....	38	2	DR F.
19	New York, 1904-5, Dela- ware County.	100	2,408	38.69	4,083	.....	186.4	1.334	.288	1.44	17.25	.947	.....	.205	97	3	EDRSB.
20	Michigan, 1905, Butler and Jackson Counties.	100	849	32.12	4,093	.....	177.4	1.010	.23	1.25	8.14	.784	.....	.181	78	22	EDRS.
21	New York, 1906, Ellis- burg.	100	1,843	35.60	4,536	.....	.....	1.130	.....	1.44	15.68	.784	.....	.....	91	9	EDRS.
22	Iowa, 1906, three coun- ties, northeast.	100	1,062	28.23	.....	.....	154	.....	.227	1.24	6.78	.....	.....	.183	75	25	EDRS.
23	New Hampshire, 1906, creamery.	100	853	35.67	.....	.....	144.4	.....	.233	.93	-2.50	.....	.....	.247	41	59	EDRS.
24	Massachusetts, 1907, cen- tral and western.	50	473	35.51	.....	.....	139.7	.....	.268	1.02	.74	.....	.....	.254	19	31	DRS.
25	Illinois, 1907, three coun- ties, northwest.	100	1,400	32.76	.....	.....	145.1	.....	.275	1.21	7.03	.....	.....	.245	70	30	EDRS.
26	New York, 1908, Bain- bridge, second time.	100	1,724	46.78	4,455	.....	.....	1.420	.....	1.36	17.01	1.05	.....	.....	83	17	EDRSF.
Total.....		2,163	28,447	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,531	632	
Average.....		.....	.....	33.43	4,213	196	158.4	1.036	.186	.249	1.24	8.11	.802	.148	.213	.....	.....

SUMMARIES BY SPECIAL FEATURES.

The next series of nine tables presents summaries of the canvasses by special features; and these are followed by a general summary of the whole series of canvasses by features.

The list of summaries is as follows:

- A. General summary of canvasses.
- B. Herds of good dairy type.
- C. Herds lacking dairy type.
- D. Herds fed silage.
- E. Good or excellent stables.
- F. Poor stables.
- G. Owners who read dairy literature.
- H. Owners who do not read dairy literature.
- I. Most profitable herds.
- J. Least profitable herds.
- K. General summary by features.

SUMMARY B.

Herds of good dairy type.

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns per \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County.....	76	1,306	\$29.22	5,180	244	.....	\$1.60	\$17.53	\$0.564	\$0.119	.....	76	0
2	Iowa, 1899, five counties.....	17	160	26.18	5,030	248	.....	1.78	20.43	.52	.105	.....	17	0
3	Ohio, 1899-1900, five counties, east.....	39	418	27.05	4,548	249	.....	1.88	23.80	.594	.108	.....	39	0
4	New York, 1900, Delaware and Otsego Counties.....	40	712	32.27	.....	229	.....	1.28	8.93	.....	.141	.....	37	3
5	Pennsylvania, 1901, Susquehanna County.....	15	235	33.08	5,007	.....	.....	1.63	20.85	.70	.....	.....	15	0
6	Wisconsin, 1901, Dunn County.....	14	193	26.71	5,356	236	.....	1.68	18.05	.491	.113	.....	14	0
7	New York, 1901-2, Onondaga County.....	20	235	28.00	5,044	245	.....	1.67	18.76	.553	.114	.....	20	0
8	New York, 1901-2, Bainbridge creamery.....	27	428	38.98	4,629	.....	.....	1.20	7.79	.842	.....	.....	25	2
9	Wisconsin, 1901-2, creamery and cheese factory.....	13	197	31.70	5,059	235	.....	1.48	15.30	.626	.135	.....	13	0
10	New York, 1901-2, Onondaga Milk Association.....	8	166	45.25	6,923	.....	.....	1.67	30.32	.653	.....	.....	7	1
11	Indiana, 1902-3, Marshall County.....	16	94	25.18	4,540	.....	208.5	1.61	15.30	.554	.....	\$0.12	15	1
12	Ohio, 1903, Geauga County, cheese factory.....	50	572	28.86	5,289	.....	.....	1.69	19.91	.545	.....	.....	49	1
13	Ohio, 1904, Lorain and Medina Counties.....	29	244	27.29	4,374	235	.....	1.30	8.10	.624	.12	.....	23	6
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	10	78	30.86	4,508	214	.....	1.32	9.83	.68	.144	.....	10	0
15	Connecticut, 1904, Andover creamery.....	7	88	38.25	.....	.....	161.9	1.18	6.91	.....	.....	.236	5	2
16	Vermont, 1904, central and northern.....	12	354	37.21	.....	.....	207.5	1.32	11.90	.....	.....	.179	11	1
17	Minnesota, 1904, creamery.....	14	155	28.02	.....	.....	219.8	1.65	18.13	.....	.....	.128	14	0
18	Wisconsin, 1905, Waukesa County.....	17	203	30.16	.....	244	.....	1.69	20.81	.....	.124	.....	17	0
19	New York, 1904-5, Delaware County.....	26	826	39.26	.....	.....	199.3	1.53	20.81	.....	.....	.197	25	1
20	Michigan, 1905, Butler and Jackson Counties.....	10	130	24.77	4,430	.....	204.0	1.96	23.82	.559	.....	.121	10	0
21	New York, 1906, Ellisburg.....	19	397	34.26	5,340	.....	.....	1.77	26.47	.641	.....	.....	19	0
22	Iowa, 1906, three counties, northeast.....	17	172	28.33	.....	.....	211.1	1.74	20.91	.....	.....	.134	16	1
23	New Hampshire, 1906, creamery.....	65	566	36.04	.....	.....	155.2	.99	0.20	.....	.....	.238	35	30
24	Massachusetts, 1907, central and western.....	15	135	36.34	.....	.....	170.2	1.14	5.17	.....	.....	.214	9	6
25	Illinois, 1907, three counties, northwest.....	27	385	31.73	.....	.....	178.0	1.54	17.23	.....	.....	.185	27	0
26	New York, 1908, Bainbridge, second time.....	49	916	49.03	5,334	.....	.....	1.60	29.58	.92	.....	.....	49	0
Total.....		652	9,365	.....	.....	.....	.....	.....	.....	.....	.....	.....	597	55
Average.....				33.95	5,104	240	189.0	1.51	17.38	.656	.122	.185		

SUMMARIES BY SPECIAL FEATURES.

SUMMARY C.

Herds lacking dairy type.

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County.....	24	498	\$29.67	4,390	196	.....	\$1.22	\$6.67	\$0.675	\$0.151	.....	22	2
2	Iowa, 1899, five counties.....	83	722	25.46	3,150	134	.....	1.02	.54	.82	.19	.....	45	38
3	Ohio, 1899-1900, five counties, east.....	20	170	27.60	3,510	174	.....	1.31	8.56	.786	.158	.....	17	3
4	New York, 1900, Delaware and Otsego Counties.....	50	801	31.54	.....	158	.....	.89	- 3.43	.....	.20	.....	10	40
5	Pennsylvania, 1901, Susquehanna County.....	21	265	32.00	3,296	.....	.....	1.05	1.70	.97	.....	.....	13	8
6	Wisconsin, 1901, Dunn County.....	30	344	27.06	4,382	197	.....	1.34	9.27	.617	.137	.....	29	1
7	New York, 1901-2, Onondaga County.....	23	254	31.00	3,084	143	.....	.87	- 3.87	1.005	.216	.....	9	14
8	New York, 1901-2, Bainbridge creamery.....	12	185	36.43	3,116	.....	.....	.85	- 5.27	1.105	.....	.....	2	10
9	Wisconsin, 1901-2, creamery and cheese factory.....	16	195	29.25	3,731	160	.....	1.05	1.60	.784	.183	.....	8	8
10	New York, 1901-2, Onondaga Milk Association.....	5	139	44.60	3,415	.....	.....	.84	- 7.05	1.30	.....	.....	1	4
11	Indiana, 1902-3, Marshall County.....	19	124	25.90	3,113	.....	139.0	1.09	1.87	.832	.....	\$0.186	10	9
12	Ohio, 1903, Geauga County, cheese factory.....	29	233	26.51	3,361	.....	.....	1.12	3.18	.785	.....	.....	22	7
13	Ohio, 1904, Lorain and Medina Counties.....	34	217	26.88	3,380	165	.....	.92	- 2.10	.792	.162	.....	14	20
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	8	59	31.96	2,494	114	.....	.62	-12.08	1.28	.279	.....	0	8
15	Connecticut, 1904, Andover creamery ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Vermont, 1904, central and northern ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Minnesota, 1904, creamery ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Wisconsin, 1905, Waukesha County.....	9	150	29.89	.....	159	.....	1.07	2.09	.....	.188	.....	7	2
19	New York, 1904-5, Delaware County.....	15	340	34.66	.....	.....	162.4	1.30	10.50	.....	.....	.213	13	2
20	Michigan, 1905, Butler and Jackson Counties.....	10	69	38.57	3,542	.....	158.5	1.01	.39	1.088	.....	.243	5	5
21	New York, 1906, Ellisburg ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Iowa, 1906, three counties, northeast.....	83	890	27.09	.....	.....	143.0	1.19	5.16	.....	.....	.197	59	24
23	New Hampshire, 1906, creamery.....	35	287	35.00	.....	.....	121.6	.....	- 8.41	.76	.....	.287	6	29
24	Massachusetts, 1907, central and western.....	35	338	35.14	.....	.....	126.6	.97	- 1.14	.....	.....	.277	10	25
25	Illinois, 1907, three counties, northwest.....	73	1,015	33.27	.....	.....	133.0	1.10	3.50	.....	.....	.27	43	30
26	New York, 1908, Bainbridge, second time.....	51	809	44.64	3,600	.....	.....	1.11	4.91	1.24	.....	.....	34	17
	Total.....	685	8,104	.....	.....	.....	.....	.....	.....	.....	.....	.....	379	306
	Average.....	.....	.....	32.01	3,550	162	138.2	1.06	2.03	.908	.178	.23	.....	.....

¹ Herds lacking dairy type not indicated in this canvass.

SUMMARY D.

Herds fed silage.

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Re- turns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profit- able herds.	Unprof- itable herds.
1	Wisconsin, 1899, Jefferson County.....	18	508	\$31.06	5,623	254	.....	\$1.57	\$17.11	\$0.552	\$0.122	.....	18	0
2	Iowa, 1899, five counties.....	3	70	29.00	5,767	302	.....	1.98	28.32	.503	.096	.....	3	0
3	Ohio, 1899-1900, five eastern counties.....	40	506	25.82	4,278	230	.....	1.75	19.35	.603	.112	.....	39	1
4	New York, 1900, Delaware and Otsego Counties.....	26	566	31.77	.....	192	.....	1.10	3.22	.....	.165	.....	14	12
5	Pennsylvania, 1901, Susquehanna County.....	14	259	34.21	4,525	.....	.....	1.41	13.91	.756	.....	.....	12	2
6	Wisconsin, 1901, Dunn County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	New York, 1901-2, Onondaga County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	New York, 1901-2, Bainbridge creamery.....	25	548	38.68	4,139	.....	.....	1.06	2.32	.935	.....	.....	15	10
9	Wisconsin, 1901-2, creamery and cheese factory.....	6	111	31.50	5,928	260	.....	1.68	21.42	.531	.121	.....	6	0
10	New York, 1901-2, Onondaga Milk Association.....	14	389	42.43	4,968	.....	.....	1.26	10.96	.853	.....	.....	11	3
11	Indiana, 1902-3, Marshall County.....	5	45	23.57	4,823	.....	211.3	1.71	16.74	.503	.....	\$0.115	5	0
12	Ohio, 1903, Geauga County, cheese factory.....	15	241	31.06	5,501	.....	.....	1.71	22.05	.564	.....	.....	15	0
13	Ohio, 1904, Lorain and Medina Counties.....	8	95	27.00	4,596	251	.....	1.42	11.51	.587	.107	.....	7	1
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	2	27	30.79	4,338	204	.....	1.36	11.08	.710	.150	.....	2	0
15	Connecticut, 1904, Andover creamery.....	1	14	38.75	.....	.....	191.3	1.44	17.19	.....	.....	.203	1	0
16	Vermont, 1904, central and northern.....	19	642	36.05	.....	.....	160.9	1.04	1.55	.....	.....	.224	12	7
17	Minnesota, 1904, creamery.....	3	40	29.12	.....	.....	275.0	1.80	23.36	.....	.....	.106	3	0
18	Wisconsin, 1905, Waukesha County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	New York, 1904-5, Delaware County.....	12	382	40.12	4,026	.....	194.2	1.44	17.73	.996	.....	.206	12	0
20	Michigan, 1905, Butler and Jackson Counties.....	18	229	27.79	4,398	.....	192.2	1.66	18.28	.631	.....	.145	17	1
21	New York, 1906, Ellisburg.....	53	1,118	36.23	4,728	.....	.....	1.42	15.15	.766	.....	.....	51	2
22	Iowa, 1906, three counties, northeast.....	4	50	29.44	.....	.....	239.0	1.85	25.15	.....	.....	.123	4	0
23	New Hampshire, 1906, creamery.....	18	196	34.67	.....	.....	158.7	1.00	.20	.....	.....	.220	11	7
24	Massachusetts, 1907, central and western ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Illinois, 1907, three counties, northwest.....	7	184	29.00	.....	.....	197.0	1.87	25.18	.....	.....	.161	7	0
26	New York, 1908, Bainbridge, second time.....	18	469	48.00	5,123	.....	.....	1.58	27.84	.937	.....	.....	17	1
Total.....		329	6,689	.....	.....	.....	.....	.....	.....	.....	.....	.....	282	47
Average.....		.....	.....	34.98	4,760	230	181.8	1.39	13.50	.747	.129	.189	.....	.....

¹ Use of silage not reported.

SUMMARY E.

Herds having good or excellent stables.¹

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County.....	55	990	\$29.37	5,192	247	.....	\$1.61	\$17.92	\$0.565	\$0.115	.....	55	0
2	Iowa, 1899, five counties ²	50	535	26.92	4,447	237	.....	1.78	21.00	.605	.114	.....	50	0
3	Ohio, 1899-1900, five counties, east.....	33	561	33.27	4,248	229	.....	1.23	7.65	.783	.146	.....	28	5
4	New York, 1900, Delaware and Otsego Counties.....	13	173	34.62	5,041	.....	.....	1.56	19.39	.687	.....	.....	12	1
5	Pennsylvania, 1901, Susquehanna County.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Wisconsin, 1901, Dunn County ².....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	New York, 1901-2, Onondaga County.....	11	132	30.73	5,071	244	.....	1.63	19.36	.606	.126	.....	11	0
8	New York, 1901, Bainbridge creamery.....	43	666	38.98	4,256	.....	.....	1.10	4.05	.914	.....	.....	28	15
9	Wisconsin, 1901-2, creamery and cheese factory ².....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	New York, 1901-2, Onondaga Milk Association.....	36	817	43.89	5,998	.....	.....	1.35	15.30	.732	.....	.....	27	9
11	Indiana, 1902-3, Marshall County ².....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Ohio, 1903, Geauga County, cheese factory.....	16	162	30.35	5,270	.....	.....	1.60	18.21	.576	.....	.....	16	0
13	Ohio, 1904, Lorain and Medina Counties.....	3	22	27.33	4,704	279	.....	1.61	16.67	.581	.098	.....	3	0
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	2	16	30.64	3,825	181	.....	1.12	3.68	.801	.169	.....	2	0
15	Connecticut, 1904, Andover creamery.....	3	55	37.63	.....	.....	157.8	1.28	10.54	.....	.....	\$0.238	3	0
16	Vermont, 1904, central and northern.....	6	215	36.91	.....	.....	177.2	1.38	14.03	.....	.....	.208	6	0
17	Minnesota, 1904, creamery.....	57	560	24.39	.....	.....	156.0	1.20	4.93	.....	.....	.163	41	16
18	Wisconsin, 1905, Waukesha County ².....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	New York, 1904-5, Delaware County.....	53	1,403	40.12	4,160	.....	206.1	1.50	20.06	.964	.....	.195	53	0
20	Michigan, 1905, Butler and Jackson Counties.....	38	359	27.10	4,749	.....	206.0	1.81	21.84	.571	.....	.131	38	0
21	New York, 1906, Ellisburg.....	33	653	38.10	5,057	.....	.....	1.50	19.05	.753	.....	.....	33	0
22	Iowa, 1906, three counties, northeast.....	66	737	29.82	.....	.....	170.0	1.30	9.05	.....	.....	.175	50	16
23	New Hampshire, 1906, creamery.....	41	349	37.40	.....	.....	175.1	1.10	3.74	.....	.....	.214	31	10
24	Massachusetts, 1907, central and western.....	15	147	37.80	.....	.....	172.4	1.16	6.05	.....	.....	.219	11	4
25	Illinois, 1907, three counties, northwest.....	55	770	31.10	.....	.....	153.0	1.35	10.95	.....	.....	.203	46	9
26	New York, Bainbridge, second time.....	10	184	49.40	5,032	.....	.....	1.49	24.05	.981	.....	.....	9	1
	Total.....	639	9,506	.....	.....	.....	.....	.....	.....	.....	.....	.....	553	86
	Average.....	.....	.....	34.53	4,793	240	180.0	1.41	14.12	.75	.124	.187	.....	.....

¹ It will be observed that in the canvasses stables are variously classified. The summary includes the best class from each canvass, however named, and in some cases a combination of the two best classes.

² Stabling not reported.

SUMMARY F.
Herds having poor stables.

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County.....	12	220	\$28.83	3,950	177	.....	\$1.14	\$4.04	\$0.73	\$0.163	.....	10	2
2	Iowa, 1899, five counties ¹	15	117	26.47	3,274	168	.....	1.29	7.68	.809	.157	.....	13	2
3	Ohio, 1899-1900, five counties, east.....	15	117	26.47	3,274	168	.....	1.29	7.68	.809	.157	.....	13	2
4	New York, 1900, Delaware and Otsego Counties.....	17	293	30.94	2,841	144	.....	.82	— 5.57	1.089	.215	.....	1	16
5	Pennsylvania, 1901, Susquehanna County.....	15	199	32.87	3,073	.....	.....	.98	— .66	1.07	.....	.....	6	9
6	Wisconsin, 1901, Dunn County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	New York, 1901-2, Onondaga County.....	33	396	30.53	3,488	162	.....	1.10	3.05	.875	.188	.....	16	17
8	New York, 1901-2, Bainbridge creamery.....	25	387	35.76	3,255	.....	.....	.87	— 4.50	1.099	.....	.....	8	17
9	Wisconsin, 1901-2, creamery and cheese factory ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	New York, 1901-2, Onondaga Milk Association.....	9	204	41.89	4,380	.....	.....	1.12	5.24	.956	.....	.....	7	2
11	Indiana, 1902-3, Marshall County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Ohio, 1903, Geauga County, cheese factory.....	33	334	26.81	3,954	.....	.....	1.35	9.38	.671	.....	.....	28	5
13	Ohio, 1904, Lorain and Medina Counties.....	40	291	25.91	3,488	178	.....	1.08	1.99	.743	.145	.....	25	15
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	5	28	32.20	3,218	152	.....	.80	— 6.44	1.001	.212	.....	1	4
15	Connecticut, 1904, Andover creamery.....	6	46	36.50	.....	.....	111.8	.79	— 7.66	.....	.....	\$0.326	0	6
16	Vermont, 1904, central and northern.....	15	214	36.53	.....	.....	123.2	.73	— 9.86	.....	.....	.297	0	15
17	Minnesota, 1904, creamery.....	15	156	23.40	.....	.....	114.2	1.01	.19	.....	.....	.205	8	7
18	Wisconsin, 1905, Waukesha County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	New York, 1904-5, Delaware County.....	13	258	36.55	3,296	.....	143.0	1.15	5.48	1.109	.....	.255	10	3
20	Michigan, 1905, Butler and Jackson Counties.....	23	177	41.21	3,960	.....	173.0	.97	— 1.24	1.04	.....	.238	9	14
21	New York, 1906, Ellisburg.....	6	73	39.01	4,039	.....	.....	1.17	6.63	.965	.....	.....	4	2
22	Iowa, 1906, three counties, northeast.....	7	58	29.77	.....	.....	143.0	1.09	2.68	.....	.....	.208	4	3
23	New Hampshire, 1906, creamery.....	18	153	34.44	.....	.....	93.9	.60	—13.78	.....	.....	.367	0	18
24	Massachusetts, 1907, central and western.....	9	85	33.89	.....	.....	117.9	.89	— 3.73	.....	.....	.287	1	8
25	Illinois, 1907, three counties, northwest.....	2	28	32.05	.....	.....	119.0	1.02	.64	.....	.....	.269	1	1
26	New York, 1908, Bainbridge, second time.....	5	58	41.40	2,805	.....	.....	.92	— 3.46	1.44	.....	.....	1	4
Total.....		323	3,775	.....	.....	.....	.....	.....	.....	.....	.....	.....	153	170
Average.....		.....	.....	32.53	3,514	164	130.0	1.01	.23	.927	.177	.266	.....	.....

¹ Stabling not reported.

SUMMARY G.

Herds whose owners read dairy literature.

Serial No	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County ¹													
2	Iowa, 1899, five counties.....	25	221	\$26.34	4,097	182		\$1.28	\$7.38	\$0.642	\$0.145		20	5
3	Ohio, 1899-1900, five counties east ¹													
4	New York, 1900, Delaware and Otsego Counties.....	13	221	31.92	3,898	208		1.23	7.34	.819	.153		11	2
5	Pennsylvania, 1901, Susquehanna County.....	30	398	33.93	4,414			1.38	12.89	.769			27	3
6	Wisconsin, 1901, Dunn County ¹													
7	New York, 1901-2, Onondaga County.....	26	308	32.04	4,645	216		1.39	12.50	.69	.149		20	6
8	New York, 1901-2, Bainbridge creamery.....	7	108	41.00	5,366			1.39	15.99	.764			7	0
9	Wisconsin, 1901-2, creamery and cheese factory ¹													
10	New York, 1901-2, Onondaga Milk Association.....	31	713	45.19	5,598			1.34	15.30	.807			24	7
11	Indiana, 1902-3, Marshall County.....	6	34	24.06	4,133		181.0	1.46	11.07	.582		\$0.133	6	0
12	Ohio, 1903, Geauga County, cheese factory.....	22	221	29.45	5,585			1.75	22.09	.527			22	0
13	Ohio, 1904, Lorain and Medina Counties.....	2	15	28.00	4,736	293		1.71	20.02	.591	.096		2	0
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	12	122	30.17	3,850	179		1.10	3.02	.784	.169		8	4
15	Connecticut, 1904, Andover creamery.....	6	83	38.60			182.0	1.31	11.97			.212	6	0
16	Vermont, 1904, central and northern.....	11	189	37.36			205.1	1.25	9.34			.182	10	1
17	Minnesota, 1904, creamery.....	65	638	25.52			173.0	1.36	9.26			.147	60	5
18	Wisconsin, 1905, Waukesha County.....	7	98	29.96		254		1.73	21.87		.118		7	0
19	New York, 1904-5, Delaware County.....	18	549	39.88	4,162		202.1	1.50	19.94	.958		.148	18	0
20	Michigan, 1905, Butler and Jackson Counties.....	37	358	32.21	4,432		193.0	1.39	12.56	.726		.167	31	6
21	New York, 1906, Ellisburg.....	17	340	39.18	5,513			1.69	23.12	.71			17	0
22	Iowa, 1906, three counties northeast.....	50	559	28.02			178.5	1.48	13.45			.157	45	5
23	New Hampshire, 1906, creamery.....	20	170	36.95			188.7	1.19	7.02			.196	19	1
24	Massachusetts, 1907, central and western.....	19	154	36.53			165.8	1.12	4.38			.22	11	8
25	Illinois, 1907, three counties northwest.....	27	416	32.48			180.0	1.53	17.21			.19	27	0
26	New York, 1908, Bainbridge, second time.....	13	287	49.08	5,380			1.62	30.39	.912			13	0
	Total.....	464	6,202										411	53
	Average.....			34.78	4,809	207	185.0	1.42	14.54	.775	.146	.175		

¹ Reading not reported.

SUMMARY H.

Herds whose owners do not read dairy literature.

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
1	Wisconsin, 1899, Jefferson County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	Iowa, 1899, five counties.....	75	661	\$24.87	3,141	135	.....	\$1.03	\$0.75	\$0.791	\$0.185	.....	42	33
3	Ohio, 1899-1900, five counties east ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	New York, 1900, Delaware and Otsego Counties.....	67	1,143	31.66	3,505	180	.....	1.03	.95	.903	.176	.....	32	35
5	Pennsylvania, 1901, Susquehanna County.....	20	265	31.80	3,218	.....	.....	1.07	2.23	.988	.....	.....	12	8
6	Wisconsin, 1901, Dunn County ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	New York, 1901-2, Onondaga County.....	54	640	29.13	3,581	165	.....	1.14	4.08	.813	.177	.....	33	21
8	New York, 1901-2, Bainbridge creamery.....	44	682	37.61	3,546	.....	.....	.93	-2.44	1.061	.....	.....	20	24
9	Wisconsin, 1901-2, creamery and cheese factory ¹.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	New York, 1901-2, Onondaga Milk Association.....	14	309	41.21	4,629	.....	.....	1.20	8.24	.89	.....	.....	11	3
11	Indiana, 1902-3, Marshall County.....	44	248	25.36	3,640	159.0	.....	1.22	5.58	.691	.....	\$0.159	33	11
12	Ohio, 1903, Geauga County, cheese factory.....	24	243	26.54	3,567	.....	.....	1.19	5.04	.744	.....	.....	16	8
13	Ohio, 1904, Lorain and Medina Counties.....	31	226	26.48	3,524	179	.....	1.05	1.24	.751	.148	.....	19	12
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	51	433	29.74	3,027	142	.....	.88	-3.57	.982	.21	.....	15	36
15	Connecticut, 1904, Andover creamery.....	11	72	36.09	.....	.....	123.0	.89	-3.97	.....	.....	.293	3	8
16	Vermont, 1904, central and northern.....	38	658	36.00	.....	134.6	.....	.80	-7.20	.....	.....	.267	5	33
17	Minnesota, 1904, creamery.....	35	353	23.80	.....	99.2	.....	.86	-3.21	.....	.....	.24	6	29
18	Wisconsin, 1905, Waukesha County.....	25	346	29.83	.....	190	.....	1.30	8.95	.....	.157	.....	23	2
19	New York, 1904-5, Delaware County.....	33	659	38.37	3,718	174.0	.....	1.34	13.05	1.032	.....	.22	31	2
20	Michigan, 1905, Butler and Jackson Counties.....	30	225	33.00	3,888	168.0	.....	1.19	6.27	.849	.....	.196	20	10
21	New York, 1906, Ellisburg.....	24	416	38.26	4,537	.....	.....	1.34	13.01	.845	.....	.....	19	5
22	Iowa, 1906, three counties northeast.....	46	463	27.70	.....	121.9	.....	1.01	.27	.....	.....	.227	26	20
23	New Hampshire, 1906, creamery.....	22	187	34.59	.....	130.3	.....	.73	-9.34	.....	.....	.265	1	21
24	Massachusetts, 1907, central and western.....	10	84	33.60	.....	112.4	.....	.87	-4.37	.....	.....	.299	1	9
25	Illinois, 1907, three counties, northwest.....	32	432	32.31	.....	110.0	.....	.94	-1.94	.....	.....	.30	13	19
26	New York, 1908, Bainbridge, second time.....	23	377	43.70	3,261	.....	.....	1.02	.87	1.34	.....	.....	11	12
	Total.....	753	9,122	.....	.....	.....	.....	.....	.....	.....	.....	.....	392	361
	Average.....	.....	.....	35.00	3,584	165	136.7	1.05	1.85	.918	.177	.288	.....	.....

¹ Reading not reported.

SUMMARY I.

Herds most profitable.¹

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Herds of dairy type.	Herds fed silage.	Herds having good stables.	Owners read dairy literature.
1	Wisconsin, 1889, Jefferson County.....	10	149	\$28.60	5,778	292	.....	\$1.92	\$26.31	\$0.494	\$0.098	.....	10	3	9	N.
2	Iowa, 1899, five counties.....	10	136	27.20	5,358	285	.....	2.00	27.20	.507	.096	.....	9	N.	N.	5
3	Ohio, 1899-1900, five counties, eastern.....	15	163	25.00	4,680	259	.....	2.14	28.50	.534	.097	.....	15	12	10	N.
4	New York, 1900, Delaware and Otsego Counties.....	10	140	34.60	.....	294	.....	1.52	17.99	.....	.117	.....	10	4	8	3
5	Pennsylvania, 1901, Susquehanna County..	10	172	35.00	5,178	.....	.....	1.67	23.45	.675	.....	.....	8	6	8	10
6	Wisconsin, 1901, Dunn County.....	10	123	25.10	5,918	276	.....	1.98	24.61	.424	.09	.....	7	N.	N.	N.
7	New York, 1901-2, Onondaga County.....	10	109	26.50	5,544	256	.....	1.97	25.75	.476	.103	.....	8	N.	5	7
8	New York, 1901-2, Bainbridge creamery.....	10	146	38.30	5,389	.....	.....	1.43	16.66	.71	.....	.....	7	5	7	9
9	Wisconsin, 1901-2, creamery and cheese factory.....	10	157	31.50	5,559	259	.....	1.61	19.22	.568	.121	.....	8	6	N.	N.
10	New York, 1901-2, Onondaga Milk Association.....	10	203	45.70	7,684	.....	.....	1.81	36.95	.594	.....	.....	5	N.	9	9
11	Indiana, 1902-3, Marshall County.....	10	67	24.40	5,138	.....	229.0	1.82	20.00	.474	.....	\$0.106	8	N.	N.	N.
12	Ohio, 1903, Geauga County, cheese factory..	10	127	30.25	6,830	.....	.....	2.15	34.80	.443	.....	.....	10	4	5	9
13	Ohio, 1904, Lorain and Medina Counties....	10	74	26.74	4,884	281	.....	1.66	17.75	.547	.096	.....	8	4	7	9
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	10	65	29.90	4,384	205	.....	1.36	10.90	.68	.145	.....	7	N.	1	4
15	Connecticut, 1904, Andover creamery.....	5	53	38.67	.....	.....	201.2	1.41	15.95	.....	.192	.....	5	N.	1	3
16	Vermont, 1904, central and northern.....	10	243	38.37	.....	.....	231.2	1.39	15.15	.....	.166	.....	10	4	8	6
17	Minnesota, 1904, creamery.....	10	129	29.54	.....	.....	258.0	1.83	24.66	.....	.115	.....	7	2	8	10
18	Wisconsin, 1905, Waukesha County.....	8	104	29.75	.....	274	.....	1.91	27.06	.....	.108	.....	N.	N.	N.	N.
19	New York, 1904-5, Delaware County.....	10	277	40.64	5,128	.....	260.0	1.86	34.93	.792	.....	.156	7	N.	10	9
20	Michigan, 1905, Butler and Jackson Counties.	10	96	27.30	5,434	.....	237.7	2.11	29.94	.504	.....	.115	5	4	5	8
21	New York, 1906, Ellisburg.....	10	152	32.13	5,715	.....	.....	1.99	32.01	.562	.....	.....	7	7	8	3
22	Iowa, 1906, three counties, northeast.....	25	273	28.17	.....	.....	209.7	1.74	20.83	.....	.....	.127	N.	N.	N.	N.
23	New Hampshire, 1906, creamery.....	10	118	38.30	.....	.....	213.3	1.31	12.11	.....	.....	.179	9	3	9	7
24	Massachusetts, 1907, central and western...	5	47	40.20	.....	.....	228.0	1.43	17.50	.....	.....	.185	4	N.	4	5

25	Illinois, 1907, three counties, northwestern..	10	363	32.48	.....	237.7	2.01	32.93	.....	.....	.138	7	4	8	7
26	New York, 1908, Bainbridge, second time..	10	162	52.45	6,582	.....	1.88	46.41	.796	.....	.....	10	72	140	3
	Total.....	268	3,848	.....	.....	.....	.....	.....	.....	.....	.....	191	4	10	126
	Average.....	.....	.....	33.66	5,690	271	234.0	1.78	26.18	.595	.105	.145	.....	.....	.....
	Percentage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	81	46	72	70

¹ All herds in this table are profitable. "N" stands for not reporting. "Percentage" means percentage of the affirmative class indicated, among the total reported regarding the feature mentioned. For instance, of the owners reported as either reading or not reading, 70 per cent do read dairy literature. Not all the owners were reported in regard to this feature; some canvasses failed to consider the matter of reading, while other canvasses ignored other features.

SUMMARY J.

Herds least profitable.¹

Serial No.	Location and date of canvass.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.	Herds of dairy type.	Herds fed silage.	Herds in good stables.	Owners read dairy literature.
1	Wisconsin, 1899, Jefferson County.....	10	254	\$29.50	3,930	175	.....	\$1.09	\$2.60	\$0.75	\$0.168	.....	8	2	1	1	1	N.
2	Iowa, 1899, five counties.....	10	123	26.00	2,265	89	.....	0.65	— 9.10	1.14	.293	.....	0	10	0	0	N.	2
3	Ohio, 1899-1900, five counties, eastern..	15	119	27.00	2,850	147	.....	1.09	2.43	.968	.184	.....	12	3	1	3	0	N.
4	New York, 1900, Delaware and Otsego Counties.....	10	140	33.80	.....	132	.....	.75	— 8.32	.....	.256	.....	0	10	1	1	1	0
5	Pennsylvania, 1901, Susquehanna County.....	10	149	33.21	2,614	.....	.....	.82	— 5.98	1.27	.....	.....	0	10	0	2	1	2
6	Wisconsin, 1901, Dunn County.....	10	134	28.80	3,755	174	.....	1.08	2.28	.767	.165	.....	9	1	0	N.	N.	N.
7	New York, 1901-2, Onondaga County..	10	94	32.60	2,432	113	.....	.63	—12.06	1.34	.288	.....	0	10	0	N	0	1
8	New York, 1901-2, Bainbridge creamery	10	146	36.60	2,303	.....	.....	.60	—14.53	1.58	.....	.....	0	10	1	2	1	0
9	Wisconsin, 1901-2, creamery and cheese factory.....	10	142	31.80	3,237	141	.....	.85	— 4.84	.985	.225	.....	0	10	2	0	N.	N.
10	New York, 1901-2, Onondaga Milk Association.....	10	260	47.90	3,457	.....	.....	.77	—11.08	1.385	.....	.....	0	10	1	2	8	7
11	Indiana, 1902-3, Marshall County.....	10	76	26.80	2,561	.....	120.0	.86	— 3.72	1.046	.....	\$0.223	0	10	0	0	N.	0
12	Ohio, 1903, Geauga County, cheese factory.....	10	98	27.26	2,835	.....	.....	.90	— 2.64	.961	.....	.....	2	8	1	0	3	0
13	Ohio, 1904, Lorain and Medina Counties.....	10	83	28.20	2,845	135	.....	.71	— 8.22	.991	.208	.....	0	10	3	1	5	0
14	Pennsylvania, 1904, Wayne and Franklin Counties.....	10	92	32.83	2,384	109	.....	.55	—14.70	1.37	.301	.....	0	10	0	0	0	0
15	Connecticut, 1904, Andover creamery..	5	33	36.87	.....	.....	109.1	.75	— 9.37	.....	.....	.337	0	5	0	0	0	0

¹ "N" stands for not reporting. "Percentage" means percentage of the affirmative class indicated, among the total reported regarding the feature mentioned. For instance, of the owners reported as either reading or not reading, 26 per cent do read dairy literature. Not all the owners were reported in regard to this feature; some canvasses failed to consider the matter of reading, while other canvasses ignored other features.

COMPARISON OF MOST PROFITABLE AND LEAST PROFITABLE HERDS.

In comparing the most profitable and least profitable herds in the two preceding tables we bring together the most instructive features of this investigation. The following points may be noted:

1. Cows of good dairy type are found in only 17 per cent of the least profitable herds, whereas they occur in 71 per cent of the most profitable herds.

2. Silage is fed to only one-third as many of the least profitable herds as of the most profitable herds.

3. Good stables are only one-half as common for the least profitable herds as for the most profitable herds.

4. The reading of dairy literature is reported 44 per cent less often among owners of the least profitable herds than among owners of the most profitable herds.

GENERAL SUMMARY BY FEATURES.

The following statement summarizes the various features detailed in the preceding tables, showing in each case the average total results for all the canvasses, also the differences in favor of the more progressive dairymen.

SUMMARY K.

General summary by features.

Features.	Number of herds.	Number of cows.	Yearly cost of feed per cow.	Pounds of milk yearly per cow.	Pounds of butter yearly per cow.	Pounds of butter fat yearly per cow.	Returns for \$1 worth of feed.	Net profit per cow yearly.	Food cost of milk per 100 pounds.	Food cost of butter per pound.	Food cost of butter fat per pound.	Profitable herds.	Unprofitable herds.
Total of canvasses.....	2,163	28,447	\$33.43	4,213	196	158.4	\$1.24	\$8.11	\$0.802	\$0.148	\$0.213	1,531	632
Herds of good dairy type.	652	9,365	33.95	5,104	240	189.0	1.51	17.38	.656	.122	.185	597	55
Herds lacking dairy type.	685	8,104	32.01	3,550	162	138.2	1.06	2.03	.908	.178	.23	379	306
Difference in favor of dairy type.....			-1.94	1,554	78	50.8	0.45	15.35	.252	.056	.045		
Herds fed silage.....	329	6,689	34.98	4,760	230	181.8	1.39	13.50	.747	.129	.189	282	47
Not known to be silage fed.....	1,834	21,758	32.95	4,045	186	151.2	1.20	6.46	.822	.155	.222	1,249	585
Difference in favor of silage.....			-2.03	715	44	30.6	.19	7.04	.075	.026	.033		
Herds in good stables....	639	9,506	34.53	4,793	240	180.0	1.41	14.12	.75	.124	.187	553	86
Herds in poor stables....	323	3,775	32.53	3,514	164	130.0	1.01	0.23	.927	.177	.266	153	170
Difference in favor of good stables.....			-2.00	1,279	76	50.0	.40	13.89	.177	.053	.079		
Herds whose owners read dairy literature.....	464	6,202	34.78	4,809	207	185.0	1.42	14.54	.775	.146	.175	411	53
Herds of nonreaders.....	753	9,122	35.00	3,584	165	136.7	1.05	1.85	.918	.177	.288	392	361
Difference in favor of readers.....			0.22	1,225	42	48.3	.37	12.69	.143	.031	.113		
Herds most profitable....	268	3,848	33.66	5,690	271	234.0	1.78	26.18	.595	.105	.145	268	0
Herds least profitable....	267	3,459	33.76	2,973	143	102.2	.80	-6.70	1.167	.211	.321	44	223
Difference in favor of most profitable.....			.10	2,717	128	131.8	.98	32.88	.572	.106	.176		

CONCLUSIONS.

As has been previously observed, wrong inferences might be drawn both from the data upon which this bulletin is based and from the summaries compiled from this data had the reader not been informed in regard to the manner in which the data was collected. We learn, for example, that the average cow of the 639 herds stabled comfortably returned the owner an annual profit of \$14.12, while the average cow of the 323 herds in poor stables produced during one year only 23 cents more than the cost of her feed. Here we can not believe that the difference is due wholly to the stabling, but are justified in assuming that the cows comfortably stabled were, on the whole, better individuals and had better feed and care. Just what proportion of the difference we should credit to any one of these controlling factors we have no means of determining.

1. From the 329 herds reported as having been fed silage, numbering 6,689 cows, \$1.39 was received for each dollar's worth of feed consumed, compared with \$1.20, the average return from the 21,758 cows not reported upon with reference to whether silage formed a part of their rations.

Comparing herds fed silage with those not reported to be so fed (the larger part of which probably did not have silage and which may be regarded as representing the actual common run of dairy herds in the United States), we find that the ratio of profitable to unprofitable herds among the silage fed is to that ratio among those not reported as 2.8 is to 1; or that the probabilities of making a profit are nearly three to one in favor of the silage feeder as compared with the average dairy farmer.¹

2. In the 652 herds, comprising 9,365 cows, reported as being of good dairy type, a cow paid her owner an average annual profit of \$17.38; while 685 herds, numbering 8,104 cows, not of dairy type, returned a profit of \$2.03 cents per head—the word “profit” here, as elsewhere in this bulletin, meaning the excess of receipts over value of feed.

We find, further, that the ratio of profitable to unprofitable herds is nine times as great among herds of good dairy type as it is among herds lacking good dairy type.¹

3. The owners of 464 herds, numbering 6,202 cows, were registered as readers of dairy papers. This group reported the cost of feed to be \$34.78 per cow, and secured \$1.42 for each dollar spent for feed, or a profit of \$14.54 per cow.

The cow owners whose minds were not illuminated nor their methods improved through the influence of dairy literature controlled

¹ For explanation in regard to comparison of ratios, see footnote to canvass 2, page 14.

753 herds, composed of 9,122 cows. The feed of the cows cost them a little less, viz, \$35, but they made an average annual profit of only \$1.85 per cow. Of these nonreaders, 48 per cent actually lost money in following the dairy business.

The records also show that the ratio of profitable to unprofitable herds is seven times as great among readers as it is among those who do not read.¹

4. The number of herds reported as occupying good stables was 639, comprising 9,506 head. These returned their owners a net profit of 41 cents on each dollar's worth of feed (\$1.41 return for \$1), or \$14.12 profit per head for the year; while the 323 poorly stabled herds, containing 3,775 cows, returned to their owners only 23 cents more than the cost of their feed.

The ratio of profitable to unprofitable herds is more than seven times as great among herds in good stables as it is among herds in poor stables.¹

It is the strongest confirmation of the trustworthiness of arguments if the methods which they are held to prove work out successfully in practice. It will be a source of assurance to the instructor in dairying to find that his teachings are useful when applied to business; and, on the other hand, the farmer can with confidence put such theories into practice if he finds that other farmers have done so with profit.

The conclusions reached by consideration of the facts presented in these canvasses show that what is theoretically sound in dairy instruction is also practically profitable in the actual business of dairy farming.¹

¹For explanation in regard to comparison of ratios see footnote to canvass 2, page 14.

